



CITY OF CAPE TOWN  
ISIXEKO SASEKAPA  
STAD KAAPSTAD

# Cape Town

## Biodiversity Spatial Plan 2025

Replaces the Cape Town Bioregional Plan 2015 adopted as Council Policy<sup>1</sup>  
on 19 August 2015

C43/08/15: RESOLUTIONS TAKEN BY THE EXECUTIVE MAYOR IN TERMS OF  
DELEGATED POWERS AND DECISIONS TAKEN TOGETHER WITH THE  
MEMBERS OF THE MAYORAL COMMITTEE: JULY 2015

### Prepared by the City of Cape Town Municipality

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<sup>1</sup> This plan has not been published in terms of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004), but adopted as Council Policy.

## Executive Summary

The Cape Town Biodiversity Spatial Plan 2025 replaces the Bioregional Plan that was originally adopted as Council Policy in July 2015. It is comprised of a biodiversity profile for the bioregion, the Cape Town BioNet (a map of spatial biodiversity priorities), and associated management guidelines. The bioregion encompasses the City of Cape Town (CCT) metropolitan area of 245 189 ha.

The Cape Town Biodiversity Spatial Plan 2025 adheres to the principles outlined in the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004; NEMBA). It indicates Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs) within the bioregion. CBAs must remain intact in order to meet national biodiversity targets for terrestrial and aquatic (wetland) ecosystems. CBAs and ESAs are also required to secure Cape Town's unique biodiversity into the future and in an effort to strive for the principle of sustainable development.

The purpose of the Cape Town Biodiversity Spatial Plan 2025 is to inform and guide planning, environmental assessment, and natural resource management, by a wide range of sectors whose policies and decisions impact on biodiversity.

This policy provides a framework for all CCT line departments to align their environmental responsibilities. The spatially explicit Cape Town BioNet facilitates forward planning that minimises impacts on biodiversity. This allows a more integrated, cost-effective approach to environmental management and conservation in the bioregion.

The intention of the Cape Town Biodiversity Spatial Plan 2025 is to reduce conflict between the environmental and other sectors, by providing up-to-date information on biodiversity priorities that will guide forward planning and development in the CCT. This will also facilitate sustainable development and conservation of our natural assets.

This update aligns with the Kunming-Montreal Global Biodiversity Framework 2022; National Biodiversity Assessment 2018 (SANBI, 2019); and the National Biodiversity Framework 2019-2024. It serves as CCT Policy for biodiversity priority areas in Cape Town. The Cape Town Biodiversity Spatial Plan 2025 aims to ensure that the National Environmental Management Act, 1998 (Act No. 107 of 1998; NEMA) principles are applied within Cape Town in an effective and equitable manner, in order to minimise further loss and degradation of natural habitat in biodiversity priority areas.

The Cape Town BioNet is a regularly updated, fine-scale, systematic, spatial biodiversity plan, depicted as CBA maps of terrestrial and aquatic features that are critical for conserving biodiversity and maintaining ecosystem functioning. Securing the Cape Town BioNet 2024 is an urgent priority, because natural habitat is being lost

continuously to formal and informal development and mining. Owing to Cape Town's exceptional biodiversity richness and uniqueness, as well as the intensive pressures on the land, the minimum national biodiversity targets can no longer be achieved for seven out of twenty national vegetation types (ecosystems) found in the bioregion.

The Cape Town BioNet is recognised locally as CCT policy in the Bioregional Plan 2015; provincially in the Western Cape Biodiversity Spatial Plan 2017; and nationally in policy and NEMBA legislation.

The Cape Town BioNet is also integrated into the Cape Town Municipal Spatial Development Framework (MSDF), which is approved as the statutory spatial component of the Cape Town Integrated Development Plan (IDP) in terms of the Municipal Systems Act, 2000 (Act No. 32 of 2000). Both the MSDF and IDP embody the principles of sustainable development. Similarly, the Cape Town BioNet is integrated into the eight District Spatial Development Frameworks (DSDFs) with integrated Environmental Management Frameworks (EMFs). Council approved the latest MSDF and DSDFs as spatial policy in January 2023. The DSDFs inform and respond to the MSDF and are the tools used on a daily basis to guide statutory land-use decision-making. The Cape Town Biodiversity Spatial Plan 2025 objectives and guidelines find expression through the MSDF and DSDFs.

Note that the Cape Town Biodiversity Spatial Plan 2025 is not in itself a multi-sectoral planning and assessment tool. The MSDF is the statutory land-use management and decision-making plan used in guiding statutory land-use decision-making in the CCT, in terms of the Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013; SPLUMA).

The Cape Town Biodiversity Spatial Plan 2025 will be monitored and reviewed against set biodiversity targets (for ecosystems) and indicators; as well as protected area targets and indicators. These align with the targets and indicators set in the CCT's State of Environment report, Corporate Scorecard, and Circular 88 environmental reporting to National Treasury.

## **Acknowledgements**

The editors wish to thank all the contributors who assisted in the compilation and revision of this plan, all the reviewers of the draft documents, and the teams behind the technical reports. The many contributions that have been made (starting in 2003) are too many to list, but it must be noted that this plan is the accumulation of the work of many people and organisations that are deeply committed to the protection and conservation of Cape Town's biodiversity.

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## Acronyms

BioNet	Cape Town Biodiversity Network
BMB	CCT Environmental Management Department Biodiversity Management Branch
CapeNature	Western Cape provincial conservation authority
CBA	Critical Biodiversity Area
CBD	Convention on Biological Diversity
CFR	Cape Floristic Region
CCT	City of Cape Town Municipality
DALRRD	Department of Agriculture, Land Reform and Rural Development
DEA&DP	Department of Environmental Affairs and Development Planning (Western Cape)
DFFE	Department of Forestry, Fisheries and the Environment (National)
DSDF	District Spatial Development Framework
EA	Environmental Authorisation
EIA	Environmental Impact Assessment
EMD	CCT Environmental Management Department
EMF	Environmental Management Framework
EMP	Environmental Management Plan
EMPr	Environmental Management Programme
EPWP	Expanded Public Works Programme
ESA	Ecological Support Area
GBF	Kunming-Montreal Global Biodiversity Framework 2022
GINet	Green Infrastructure Network
IDP	Integrated Development Plan
LBSAP	Local Biodiversity Strategy and Action Plan
MSA	Municipal Systems Act, 2000 (Act No. 32 of 2000)
MSDF	Cape Town Municipal Spatial Development Framework
NBA	National Biodiversity Assessment
NBF	National Biodiversity Framework
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NEMPAA	National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003)
PSDF	Provincial Spatial Development Framework
SANBI	South African National Biodiversity Institute
SANParks	South African National Parks
SPLUMA	Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013)
TMNP	Table Mountain National Park

## **PART A: BACKGROUND**

### **1 Introduction**

The Cape Town Biodiversity Spatial Plan 2025 for the City of Cape Town Municipality (CCT) consists of a biodiversity profile of the bioregion, the Cape Town BioNet 2024 (the latest fine-scale, systematic, spatial biodiversity plan and map), and accompanying land-use planning and decision-making guidelines. The Cape Town Biodiversity Spatial Plan 2025 should be used to inform land-use planning, environmental impact assessments and authorisations, and natural resources management by all sectors whose policies and decisions impact on biodiversity. The National Environmental Management Act, 1998 (Act No. 107 of 1998; NEMA) requires that all organs of state take biodiversity considerations into account in their decision-making.

The Cape Town Biodiversity Spatial Plan 2025 is framed under national legislation and the definitions therein. CCT uses the definition of biodiversity from the National Environmental Management Biodiversity Act, 2004 (Act No. 107 of 2004): “biological diversity” or “biodiversity” means the variability among living organisms from all sources including, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part and includes diversity within species, between species, and of ecosystems.

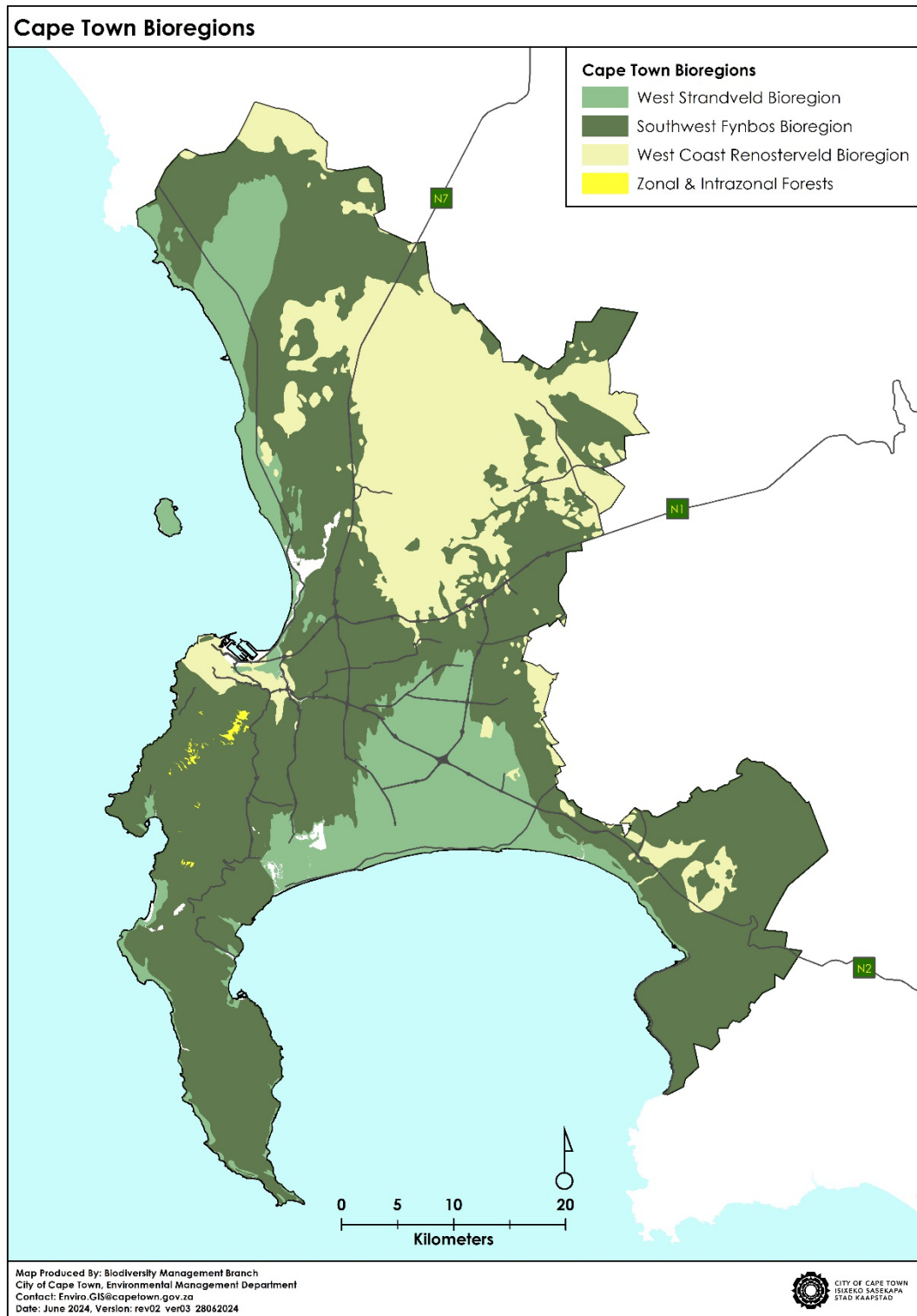
### **2 Boundary of the Bioregion**

The Cape Town bioregion covers the municipal boundaries of the Cape Town Metropolitan Municipality in the Western Cape Province of South Africa, and is 245 189 ha in extent (see Map 1). Cape Town's natural assets and biological diversity are part of what makes the city a unique and desirable place to live, work and visit.

The bioregion includes approximately 307 km of coastline. Robben Island (a World Heritage Site), Seal Island in False Bay and several rocky outcrops along the near shore coastline fall within the boundary of the bioregion. The interdependencies of the marine and terrestrial ecosystems should not be overlooked in the context of broader spatial and environmental planning, and their potential impacts (both positive and negative) on the natural environment.

The bioregion overlaps with sections of three Biosphere Reserves, namely the Cape West Coast Biosphere Reserve, Cape Winelands Biosphere Reserve, and Kogelberg Biosphere Reserve.

There are four neighbouring municipalities, namely the West Coast District Municipality to the north, the Winelands District Municipality to the east, and the Theewaterskloof Local Municipality and Overberg District Municipality to the southeast.



Map 1: Boundary of the Cape Town Bioregion

### 3 Cape Town BioNet

The Cape Town BioNet (biodiversity network) is the key component of the Cape Town Biodiversity Spatial Plan 2025. The Cape Town BioNet 2024 is the latest fine-scale, systematic, spatial biodiversity plan for Cape Town. It is a spatial plan that shows terrestrial and aquatic (wetland) features that are critical for conserving biodiversity and maintaining ecosystem functioning. These are referred to as Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs)<sup>2</sup>. The CBAs are priority areas requiring managed conservation interventions to ensure their long-term survival. The Cape Town BioNet 2024 is the most efficient and representative plan to meet national biodiversity targets<sup>3</sup> for ecosystems, and local protected area targets. The lowlands of the Cape Town bioregion have increasingly fewer remaining natural remnants, and there are therefore very few options to select from. The Cape Town BioNet 2024 already represents less than the bare minimum areas required to meet the national biodiversity targets for maintaining functional ecosystems and protection of locally indigenous species.

There is a high level of richness and uniqueness with regards to the biodiversity represented in the remaining natural areas of the CCT. This is indicated by the diversity of the vegetation types, wetlands, rivers and intertidal ecosystems. The bioregion has 20 national vegetation types, of which seven are endemic to Cape Town. This, together with the vast extent of the historical habitat transformation within a rapidly growing urban context, means that a high proportion of the remaining intact natural habitat remnants have become irreplaceable. The remaining habitats now represent the last and only opportunity to preserve the less-than-minimum representative sample of natural habitat that can enable the long-term conservation of the CCT's unique biodiversity and its persistence for future generations.

### 4 Purpose

The purpose of the Cape Town Biodiversity Spatial Plan 2025 is to inform and guide spatial planning, environmental assessment and natural resource management by a wide range of sectors whose policies and decisions impact on biodiversity. It serves as the statutory reference for biodiversity priority areas in the CCT and is aligned with the Kunming-Montreal Global Biodiversity Framework (GBF 2022), National Biodiversity Framework (NBF 2019-2024) and National Biodiversity Assessment (SANBI, 2019).

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<sup>2</sup> For further definition, please refer to the SANBI Lexicon of spatial biodiversity assessment, prioritisation and planning in South Africa, Second Edition, 2023.

<sup>3</sup> Biodiversity targets for ecosystems are the minimum proportion of each ecosystem type that needs to be kept in natural or near-natural ecological condition in the long term to maintain viable representative samples of all ecosystem types and the majority of species associated with them. Biodiversity targets differ from protected area targets, which are based on policy commitments rather than science alone.

The Cape Town Biodiversity Spatial Plan 2025 aims to ensure that the NEMA principles are applied within the CCT in an effective and equitable manner, in order to minimise loss and degradation of natural habitat. The Cape Town Biodiversity Spatial Plan 2025 makes provision for integrated management of wetlands, rivers and terrestrial vegetation remnants.

The Cape Town Biodiversity Spatial Plan 2025 strives to ensure that the CCT's ecosystems remain intact; continue to deliver high quality and sustained environmental goods and services to the municipality's residents; and provide various opportunities to the local community such as recreation, tourism, environmental education and job creation. This is fundamental to the CCT's vision of sustainability. This policy will also guide environmental management for areas requiring restoration towards a natural state. Securing CBAs and restoring degraded areas will increase (and secure long-term) the sustainability of these ecosystem goods and services, as well as mitigate the impact of climate change by improving biotic adaptation to climate change.

The Cape Town Biodiversity Spatial Plan 2025 provides a framework for all CCT departments and other organs of state to ensure that their activities have minimal negative ecological impacts. The spatially explicit Cape Town BioNet 2024 maps will allow for forward planning that strives to avoid severe impacts on the remaining CBAs. This will create a more integrated, cost-effective approach to environmental management and conservation within the CCT and assist CCT in realising its Post-2020 Global Biodiversity Framework Vision for the environment. It will also assist with the CCT's goal of securing 65,8% of the baseline Cape Town BioNet 2009 for conservation by June 2027.

The intention of the Cape Town BioNet is to reduce conflict between environmental and development sectors, by providing up-to-date information on biodiversity priorities that will guide forward planning and future development in Cape Town. This will also facilitate sustainable development and conservation of our natural assets. The intended future use of the Cape Town Biodiversity Spatial Plan 2025 does not differ from its current (Bioregional Plan 2015) use.

## **5 Limitations and Constraints**

The Cape Town BioNet 2024 is based on a fine-scale, systematic, spatial biodiversity plan. It is a depiction of the remaining natural habitat<sup>4</sup> required to meet national biodiversity targets. The base layers used in the biodiversity planning process are the most up-to-date datasets that were available at the time the plan was analysed.

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<sup>4</sup> Vegetation remnants are used as the surrogate for remaining natural habitat.



These layers are regularly updated and refined as new information becomes available.

Natural habitat in the Cape Town BioNet is constantly being lost to formal and informal development, mining, and to a lesser degree agriculture. Unmanaged invasive alien vegetation, agricultural practices, inappropriate fire regimes, and illegal activities such as dumping and poaching, also degrade the CBAs. As such, securing the Cape Town BioNet 2024 is an urgent priority. This means that the Cape Town BioNet is regularly under review and needs to inform responsible planning and development in the CCT.

In seven of the twenty national vegetation types with an historic extent in Cape Town the national biodiversity targets are no longer achievable, because there is insufficient remaining habitat. The importance of all remaining natural areas within the bioregion should be considered within this context. It should always be borne in mind that the selected Cape Town BioNet 2024 is the minimum estimated area required to meet biodiversity targets. In very few ecosystems there are remaining natural areas that could potentially make up for shortfalls in the event of the loss of CBAs. However, this must be avoided as far as possible, because the CBAs were specifically selected based on their ecological attributes (size, condition, connectivity, threatened species, etc.) and cannot merely be substituted.

It is important to note that the information and maps provided in this Cape Town Biodiversity Spatial Plan 2025 do not replace the requirement for fine-scale site assessment and detailed planning, referencing the best available information at the time of the assessment. Also note that the Cape Town Biodiversity Spatial Plan 2025 does not confer or take away development rights.

## **6 Obligations**

### **6.1 International Obligations**

South Africa is a signatory to a number of specific international agreements, such as the Convention on Biological Diversity (CBD) and World Heritage Convention. It is incumbent on local authorities to give local effect to such conventions by adopting appropriate management strategies.

The 1992 CBD is the core international agreement on biodiversity, adopted by over 180 countries. The CBD established the three fundamental objectives for biodiversity: conservation of biodiversity, sustainable use of biological resources, and equitable sharing of biodiversity benefits.

The city contains one of the serial sites of the Cape Floristic Region Protected Areas World Heritage Site. Table Mountain National Park (TMNP) is one of the eight protected areas that make up the Cape Floristic Region World Heritage Site. TMNP is also one of only a few National Parks in the world that occurs entirely within the boundaries of a single Municipality. Table Mountain is one of the New 7 Wonders of Nature, and the only site within an urban area.

CCT is a member of Local Action for Biodiversity (LAB), which is the ICLEI Local Governments for Sustainability flagship biodiversity programme developed in partnership with the International Union for the Conservation of Nature (IUCN). LAB focuses on exploring the best ways for local governments to engage in urban biodiversity conservation, enhancement, utilisation and management. Cape Town signed the Durban Commitment in September 2008, and thereby acknowledges accountability and responsibility for the health and wellbeing of our communities through protecting, sustainably utilising and managing biodiversity, and recognising its role as the foundation of our existence.

The CCT is also a member of CitiesWithNature, a unique initiative that recognises and enhances the value of nature in and around cities across the world. CitiesWithNature provides a shared platform for cities and their partners to engage and connect, working with shared commitment towards a more sustainable urban world.

The CCT is recognised by the United Nations Environment Programme (UNEP) and ICLEI as a Generation Restoration Role Model City. This Generation Restoration project (2023 – 2025) contributes to the UN Decade on Restoration and to the Global Biodiversity Framework targets through Role Model Cities strengthening advocacy and sharing knowledge as champions of restoration.

The CCT is a Ramsar Wetland City and IUCN member (the only Sub-national Government Member in southern Africa).

South Africa, as a party to the United Nations CBD, is a signatory to the Kunming-Montreal Post-2020 Global Biodiversity Framework (GBF 2022). The GBF consists of four goals for 2050, and sets 23 action-orientated global targets for urgent action over the decade to 2030.

Of these 23 global targets, the following specifically (but not exclusively) apply to the Cape Town Biodiversity Spatial Plan 2025:

- Target 1: spatial biodiversity planning,
- Target 2: 30% of areas under restoration,
- Target 3: 30% of areas conserved and managed (30x30),
- Target 4: halt human induced extinction,
- Target 6: impacts of invasive alien species,
- Target 11: ecosystem functions and services,

- Target 12: green and blue spaces in urban areas,
- Target 14: full integration of biodiversity into policy, etc., and
- Target 21: best available data, information and knowledge are accessible for decision-making.

## **6.2 National Obligations**

The National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA) provides an overview for integrated biodiversity planning and the monitoring of South Africa's biodiversity. Note, however, that the Cape Town Bioregional Plan 2015 was adopted as CCT policy, and not published in terms of NEMBA.

The National Biodiversity Framework (NBF 2019-2024) provides a framework to coordinate and align the efforts of the many organisations and individuals involved in conserving and managing South Africa's biodiversity, in support of sustainable development. It focuses on the most urgent strategies and interventions that can be used to accelerate implementation of high-level priorities of the National Biodiversity Strategy and Action Plan (NBSAP) over the five-year term.

Too often in South Africa conservation and development are seen as opposing or irreconcilable goals. As our economy grows, we need to ensure that the way we achieve this growth allows for the continued functioning of ecosystems and the persistence of the natural resource base. This is possible, if care is taken over the location of development, the type of development, and the consumption/loss of natural resources in the development process. Sustainable development depends on where and how development takes place.

The challenge we face in addressing these pressures on, and threats to, biodiversity is not to either conserve or develop, but rather *how* to conserve *and* develop. The issue is not whether development takes place, but rather where and how it takes place.

The biodiversity sector is developing increasingly effective tools to support and streamline environmental decision-making and ensure that development is appropriate. Key among these are spatial biodiversity plans which identify biodiversity priority areas, including ecological corridors and important catchments, and provide land-use planning and decision-making guidelines for these biodiversity priority areas.

## **6.3 Local Obligations**

The CCT's environmental responsibility is mandated in terms of the legislation (listed below) to protect the environment. The Cape Town Biodiversity Spatial Plan 2025 is the primary source of environmental information for incorporating biodiversity

considerations into land-use planning and decision making in the municipality, in order to avoid loss and degradation of remaining natural habitat in CBAs.

## **7 Legislation**

The legislation that governs environmental management and implementation in South Africa is entrenched in the following pieces of legislation:

### **7.1 Constitution**

Section 24 of the Constitution of the Republic of South Africa, 1996 states that all South Africans have the right to a healthy environment, which is protected for present and future generations from ecological degradation. The Constitution presents an overarching obligation to sustainable environmental management.

Municipal planning is identified as a local government function in Part B of Schedule 4 of the Constitution. Local authorities should therefore provide services in a sustainable manner, provide a safe and healthy environment for all communities, promote social and economic development, and ensure transparent governance.

### **7.2 National Environmental Management Act**

The National Environmental Management Act, 1998 (Act No. 107 of 1998; NEMA) states that local government should develop strategies to protect natural and cultural resources (which constitute and sustain the metropolitan area) and at the same time proactively address poverty.

### **7.3 National Environmental Management Biodiversity Act**

The National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA) seeks, among other things, to provide for the management and conservation of biological diversity within South Africa. To do this, NEMBA introduced several new legislated planning tools to assist with the management and conservation of South Africa's biological diversity. Section 48(2) of NEMBA provides that an organ of state that must prepare an Environmental Implementation Plan or Environmental Management Plan in terms of Chapter 3 of NEMA, and a municipality that must adopt an Integrated Development Plan in terms of the Municipal Systems Act must:

- a) Align its plan with (...) any applicable bioregional plan;
- b) Incorporate into that plan those provisions of (...) a bioregional plan that specifically apply to it; and

- c) Demonstrate in its plan how (...) any applicable bioregional plan may be implemented by that organ of state or municipality.

As CCT policy, the Cape Town Biodiversity Spatial Plan 2025 will inform spatial planning processes and the Integrated Development Plan.

#### **7.4 Municipal Systems Act**

The Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000; MSA) has certain implications and obligations for environmental management by local government, which must be accommodated and reflected in the institutional framework and policies of the local government authority.

#### **7.5 Municipal Planning By-law**

The Municipal Planning By-Law, 2015 refers to policies that should guide decision making in respect of land use and planning applications made in terms of this By-Law. With respect to spatial biodiversity planning, the Municipal Planning By-law gives effect to the municipal planning function allocated to municipalities in terms of Part B of Schedule 4 of the Constitution. It also gives effect to certain requirements set in the Spatial Planning and Land Use Management Act, 2013 (SPLUMA) and the Western Cape Land Use Planning Act, 2015 (LUPA).

#### **7.6 Other Acts that relate to local authorities and biodiversity**

(This list is not exhaustive)

- a) Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013)
- b) Minerals and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)
- c) National Water Act, 1998 (Act No. 36 of 1998)
- d) National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003)
- e) National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008)
- f) National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)
- g) National Veld and Forest Fire Act, 1998 (Act No. 101 of 1998)
- h) National Forests Act, 1998 (Act No. 30 of 1998)
- i) Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)
- j) Sea Birds and Seals Protection Act, 1973 (Act No. 46 of 1973)
- k) Water Services Act, 1997 (Act No. 108 of 1997)
- l) National Heritage Resources Act, 1999 (Act No. 25 of 1999)
- m) World Heritage Convention Act, 1999 (Act No. 49 of 1999)

- n) Marine Living Resources Act, 1998 (Act No. 18 of 1998)
- o) Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000)
- p) Local Government: Municipal Finance Management Act, 2003 (Act No. 56 of 2003)
- q) White Paper on Conservation and Sustainable Use of South Africa's Biodiversity (2023)
- r) Western Cape Nature Conservation Ordinance, 1974 (No. 19 of 1974)
- s) Western Cape Biodiversity Act, 2021 (Act No. 6 of 2021)
- t) Western Cape Land Use Planning Act, 2014 (Act No. 3 of 2014).

## **8 Policies and Strategies**

### **8.1 Provincial Spatial Development Framework**

The ten-year Provincial Spatial Development Framework (PSDF 2014) is the spatial expression of the Provincial Growth and Development Strategy. The broad Provincial Spatial Planning Categories as set out in the PSDF are required to be refined and delineated in greater detail at the district and local Spatial Development Framework levels (

Table 1).

The PSDF requires that ground truthing through on-site assessment is done to validate and inform appropriate development decisions at the local level.

This Cape Town Biodiversity Spatial Plan 2025 follows the guidelines set in the PSDF as it relates to Objective 8: Protect biodiversity and agricultural resources. Core 1 areas as identified in the PSDF include Protected Areas and CBAs, while Core 2 areas are the ESAs. These core areas represent a resource in which the natural environment is able to provide a range of ecosystem services essential for sustainable life on earth, and as such should be retained in their natural state.

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*Table 1: Alignment of the Cape Town BioNet 2024 categories with the Municipal Spatial Development Framework, Provincial Spatial Development Framework, and National Critical Biodiversity Area categories.*

<b>BioNet 2024</b>	<b>CBA Descriptors</b>	<b>MSDF (Map 5b)</b>	<b>PSDF</b>	<b>National CBA Map</b>	<b>Land Management Objective</b>
<b>PA</b>	Protected Area	Core 1: Protected & Conserved	Core 1	PA	To be maintained as Protected Areas.
<b>CA</b>	Conservation Area				To be managed and maintained as Conservation Areas or upgraded to Protected Areas where appropriate.
<b>CBA1</b>	Critical Biodiversity Area 1 (irreplaceable)	Core 1: CBA		CBA	To be managed for biodiversity conservation purposes, restored where required and incorporated into the Protected Area network.
<b>CBA2</b>	Critical Biodiversity Area 2 (optimal)				To be restored and managed for biodiversity conservation purposes and incorporated into the Protected Area network.
<b>ESA1</b>	Ecological Support Area 1	Core 2: ESA	Core 2	ESA	To be managed for biodiversity conservation purposes, restored where required.
<b>ESA2</b>	Ecological Support Area 2	Buffer 2	Buffer 2		Current land-use should be maintained, or else restored to a more natural state.
<b>ONA</b>	Other Natural Area	Buffer 1	Buffer 1	ONA	As per the CCT District EMF.
<b>NNR</b>	No natural habitat remaining				As per the CCT District EMF.

## 8.2 Integrated Development Plan

In terms of the MSA, municipalities are required to lead and manage a plan for development. This municipal Integrated Development Plan (IDP) includes the allocation of resources not only to concentrate on the provision of fundamental municipal services and the eradication of poverty, but also to boost local economic development, create employment and promote the process of reconstruction and development. An IDP therefore should be seen as a tool that would be used to eradicate the legacy of the past through restructuring the city, promoting social equality, creating wealth, fighting poverty and enabling inter and intra governmental co-operation. Cape Town's IDP 2022-2027 recognises the environment as a priority in support of its vision of a City of Hope.



### **8.3 Municipal Spatial Development Framework**

The overall intention of the Cape Town Municipal Spatial Development Framework (MSDF) is to guide and manage urban growth, and to balance competing land-use demands, by putting in place a long-term, logical development path that will shape the spatial form and structure of Cape Town. The MSDF is underpinned by well-defined spatial development principles within the legislative context of SPLUMA.

The MSDF is approved as the spatial component plan of the IDP in terms of the MSA. The Cape Town BioNet (CBA Map) is integrated into the MSDF in its entirety as MSDF Map 5B, and translated into Critical Natural Asset areas where development is discouraged or prohibited (

Table 1). These Critical Natural Assets cover approximately 34% of the municipality, and are one of the four primary informants for the Consolidated Spatial Plan Concept (MSDF Map 5D).

The MSDF includes policy provisions directly related to the protection and enhancement of biodiversity, namely Policy Statement 11: Plan for increased efforts to protect and enhance biodiversity networks at all levels of government. The MSDF also contains the Urban Edge, NEMA Urban Area, and Coastal Management Line, which will *inter alia* support the preservation of biodiversity resources in the city.

#### **8.4 District Spatial Development Frameworks**

The Cape Town Biodiversity Spatial Plan 2025 guidelines find expression as the key biodiversity informant of the MSDF and the integrated DSDFs. The eight DSDFs inform and respond to the MSDF and future CCT plans and programmes; and are the tools used on a daily basis to guide statutory land-use decision-making.

#### **8.5 Environmental Management Frameworks**

Environmental Management Frameworks (EMFs) are legislated in terms of the NEMA Environmental Management Framework Regulations, 2010. EMFs are intended to inform environmental assessment and management. EMFs help to streamline the environmental assessment process by geographically determining sensitive areas where certain activities require environmental authorisation and other less sensitive areas where authorisation is not required. EMFs are legally enforceable through section 5(2) of the EMF regulations, which provides that the EMF must be taken into account in the consideration of applications for environmental authorisation in or affecting the geographical area to which the framework applies.

EMFs assist the planning process to identify the opportunities and constraints, and to provide guidance regarding the nature and scale of development, which should occur in an area whilst retaining a sustainability focus.

The CCT has integrated the EMFs for all eight districts into their respective DSDFs in order to ensure the EMFs effectively inform and respond to the future plans and programmes for the CCT. The EMFs therefore form an integrated component of the DSDF report.

The 2012 EMFs were approved by DEA&DP with the concurrence of the national Minister of Environmental Affairs in terms of section 5 of GNR 547 (2010 EMF regulations). Council approved the current integrated DSDFs and MSDF on 26 January 2023.

## **8.6 Environmental Strategy**

The Environmental Strategy for the CCT was approved by Council in August 2017; and is currently under review. This replaced the Integrated Metropolitan Environmental Policy. The Environmental Strategy Vision is “To enhance, protect and manage Cape Town's natural and cultural resources for long term prosperity, in a way that optimises economic opportunities and promotes access and social well-being”.

In order to realise this vision, the CCT aims to achieve certain long-term outcomes. The CCT recognises that these long-term outcomes are ambitious and aspirational; and should be seen as end-states to strive for and work towards, rather than binding goals or targets. Several of these long-term outcomes can be achieved by securing the Cape Town BioNet.

## **8.7 Other relevant CCT Policies and Strategies**

(This list is not exhaustive)

- a) Local Biodiversity Strategy and Action Plan, 2019
- b) Integrated Coastal Management Policy, 2014
- c) Climate Change Strategy, 2021
- d) Management of Urban Stormwater Impacts Policy, 2009
- e) Floodplain and River Corridor Management Policy, 2009
- f) Human Settlements Strategy, 2021
- g) Inclusive Economic Growth Strategy, 2020
- h) Parks Development Policy, 2015
- i) Resilience Strategy, 2019
- j) Urban Forest Policy, 2023
- k) Urban Agricultural Policy, 2007
- l) Urban Design Policy, 2024
- m) Water Strategy, 2020

More information on CCT's environmental policies and strategies can be found at: <https://www.capetown.gov.za/Local%20and%20communities/Nature-and-the-community/Conserving-our-natural-heritage/Our-conservation-strategies-and-plans>.

## **9 Users**

### **9.1 Mandated Users**

CCT will align the contents of the Cape Town Biodiversity Spatial Plan 2025 into the IDP and by implication into the MSDF, DSDFs and environmental implementation plans (EIPs) upon review of the current plans that are in place. The review periods will be coordinated to streamline this process and ensure integration.

## **9.2 Recommended Users**

Government departments and agencies whose decisions and actions impact on biodiversity and the natural environment, including those whose core business and expertise is not biodiversity conservation. These include:

- a) Any organ of state that must prepare an EIP or Environmental Management Plan (EMP) in terms of Chapter 3 of NEMA (this is also required in section 48(2)).
- b) All decision-makers who are required by section 2(1)(c) of NEMA to apply the NEMA section 2 principles in their decision-making. Such decision-makers are required to consider amongst other things sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar ecosystems which require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure. Protected Areas and CBAs identified in a biodiversity spatial plan are required to be considered as such areas, and should therefore be considered by decision-makers in the course of the decision making process. This means that biodiversity spatial plans should be considered by:
  - i. National Department of Forestry, Fisheries and Environment (DFFE) and National Department of Agriculture, Land Reform and Rural Development (DALRRD), which must take the bioregion, biodiversity spatial plan and identified CBAs into account in their authorisations (e.g. for ploughing virgin land, for subdivision of agricultural land) and in the programmes which they develop;
  - ii. National Department of Water and Sanitation (DWS), which must take the bioregion, biodiversity spatial plan and identified CBAs into account in their decision-making, for example in granting water use licences;
  - iii. Catchment Management Agencies, which must integrate the bioregion, biodiversity spatial plan and identified CBAs in their decision-making about water allocations; and

- iv. Department of Mineral Resources and Energy (DMRE), which must take the bioregion, biodiversity spatial plan and identified CBAs into account in their authorisations for prospecting and mining.
- c) Neighbouring local and district municipalities should take the Cape Town Biodiversity Spatial Plan 2025 into account if and when they revise their CBA maps and SDFs to ensure edge-matching with the Cape Town BioNet.
- d) National and Provincial environment departments, which should take the provisions of biodiversity spatial plans into account in the development of provincial supplements to the NEMA EIA regulations (such as maps of sensitive areas) in terms of section 24A, and in developing EMFs and National and Provincial Guidelines in terms of the Chapter 8 EIA regulations.
- e) Provincial conservation authority (CapeNature), which must use biodiversity spatial plans to guide their inputs into land-use planning, land-use decision-making and natural resource management.
- f) Provincial departments responsible for spatial planning, which must take biodiversity spatial plans into account in the development of provincial spatial plans or frameworks, and in their support to, or approval of, municipal spatial plans such as SDFs.
- g) DALRRD, which must take biodiversity spatial plans into account in planning and implementing land reform programmes, and in the development of policy, legislation or guidelines for land-use planning and management.
- h) Provincial Department of Local Government and Department of Human Settlement, which must avoid CBAs in identifying suitable sites for new housing developments.
- i) National Department of Public Works and Infrastructure, and the Western Cape Department of Transport and Public Works, which must take biodiversity spatial plans into account in identifying appropriate locations and routes for roads and other infrastructure.
- j) Expanded Public Works Programmes (EPWP) that deal with maintaining and restoring natural resources, which must take biodiversity spatial plans into account in planning and scheduling their activities, prioritising CBAs and protected areas where possible.
- k) Environmental and planning consultants and specialists undertaking Strategic Environmental Assessments, or Environmental Impact Assessments.

- l) Conservation NGOs (organisations whose core business is biodiversity conservation) should use biodiversity spatial plans to guide their comments on planning tools such as DSDFs and on development applications; and to guide the location of their programmes and projects.
- m) Private landowners – individuals and companies – who want more information about the biodiversity value of their landholdings and who wish to make a contribution to conserving the nation's natural heritage by ensuring that the use of their land is compatible with biodiversity conservation.
- n) Private developers should use the Cape Town Biodiversity Spatial Plan 2025 as part of due diligence as to the developability of a property before acquiring it, or when considering potential land-use options.

## 10 Developing the Cape Town Biodiversity Spatial Plan

The identification and prioritisation of the Cape Town BioNet has been a collaborative process between the CCT's Environmental Management Department (EMD) and key conservation partners, namely the South African National Biodiversity Institute (SANBI), South African National Parks (SANParks), CapeNature, Provincial Government departments and environmental specialists over two decades.

### 10.1 Terrestrial Biodiversity Network

The CCT committed to implementing a Biodiversity Strategy in 2003. This Strategy required that a Biodiversity Network (BioNet) be established to identify CBAs and ensure their conservation and rehabilitation in the long-term. Selection of sites was based on systematic biodiversity planning principles and methods.

The CBAs are intended to represent the minimum area of terrestrial and freshwater habitat that is required to meet the CCT's biodiversity targets. A systematic biodiversity planning process was initiated in 2002 that identified the priority areas of the CCT. The analysis included a *a priori* selection of existing protected areas and remaining extent of Core Flora Sites (Maze & Rebelo, 1999). The Core Flora Sites are not all formally protected, but are required to conserve Cape Town's unique lowland flora.

Cape Town was the first municipality in South Africa to complete a systematic biodiversity spatial plan. This first BioNet was completed in 2004. Thereafter key revisions took place in 2006 to align with the national vegetation types, 2008-2009 after ground truthing, 2011 to align with the nation Red List of Ecosystems and to incorporate climate change adaptation, 2016 to include the national wetland classification, and 2021 to include Strategic Water Source Areas and Groundwater

Protection Zones for the Cape Flats and Atlantis Aquifers, and an extended planning domain. Details on the methodology used for each revision are contained in the relevant BioNet technical reports:

<https://www.capetown.gov.za/Family%20and%20home/City-publications/publications-and-reports/environment>.

The Cape Town BioNet has always aligned to national biodiversity targets and biodiversity planning; and continues to adopt the latest biodiversity planning best practice.

### **10.1.1 Cape Town BioNet 2024**

The Cape Town BioNet 2024 is based on the 2021 rerun analysis (Pence, 2021) that was required for the reasons outlined below relating to the input layers and spatial products.

Various input layers to the old Cape Town BioNet required updating in response to:

- a) Updates to the national ecosystem types and threat status based on the gazetted Terrestrial Red List Ecosystems 2022 and revised national vegetation map (2019). There are now twenty national vegetation types in Cape Town, eleven of which are Critically Endangered, seven Endangered, one Vulnerable and one Least Concern. There are also now seven vegetation types endemic to the CCT boundaries.
- b) Updates to the CCT's indigenous vegetation remnant database. Over the past few years, there have been significant losses of natural vegetation to formal and informal development in the city.
- c) Inclusion of additional biodiversity features as base layers to the Cape Town BioNet. These features include the Strategic Water Source Areas (surface water), Groundwater Protection Zones for the Cape Flats Aquifer and Atlantis Aquifer, and other national biodiversity-related datasets that are now available.
- d) Changes to the CCT's administrative boundary.

New spatial products from the Cape Town BioNet rerun are incorporated into the Cape Town Biodiversity Spatial Plan 2025 as follows:

- e) Amended CBA categories on the Cape Town BioNet 2024, for closer alignment to the national guidelines for CBA Maps.
- f) The Terrestrial BioNet and Aquatic BioNet are now shown on separate maps. This was a recommendation from a workshop with conservation partners.
- g) The inclusion of an extended planning domain. This involves the addition of a 10 km terrestrial buffer around the CCT, as well as all major water supply dams and associated sub-catchments. The 10 km buffer aims to ensure adequate buffering and connectivity of CCT Protected Areas; to have cost-effective offset options; and to conserve threatened ecosystems and species. Most of

Cape Town's water supply comes from outside the municipality. Therefore, to ensure Cape Town's water security, we need to secure the catchments feeding the dams.

Notably, the Cape Town BioNet 2024 is now edge-matched and merged with the Western Cape Biodiversity Spatial Plan 2023 to accommodate the new extended planning domain (Pence, 2021).

## **10.2 Aquatic Biodiversity Network**

In addition to its rich terrestrial biodiversity, Cape Town supports 21 rivers and tributaries, and numerous wetlands. Historically, the lowlands of Cape Town consisted of a mosaic of wetland types, interconnected via the groundwater system. As a result of urbanisation, most of the wetlands and rivers on the Cape Flats have been modified; with wetlands receiving stormwater or being drained, and the rivers canalised or channelised. The abstraction of groundwater also impacts negatively on the groundwater table and many seasonal wetland systems.

The development of a comprehensive wetlands map for the CCT was recognised in 2006 as an urgent requirement for planning purposes and for management of the CCT's wetland resources. In particular, a comprehensive wetlands layer, including information on wetland type, was urgently needed for prioritisation of areas to be included in the Cape Town BioNet. The original CCT wetlands map was produced from a largely desktop assessment of aerial photography. A sub-set of wetlands was ground-truthed between December 2008 and June 2009. CCT protected areas have also since been ground-truthed, and wetlands outside of nature reserves are verified on an *ad hoc* basis as needed.

The rivers layer for the CCT is used in the Aquatic BioNet map. The determination of river buffers is done according to the CCT's Floodplain and River Corridor Management Policy (2009).



## PART B: BIODIVERSITY PROFILE

### 11 Biodiversity Significance

Cape Town is recognised by the United Nations as “the most biodiverse urban area in the world”<sup>5</sup>. Cape Town lies in the heart of the Greater Cape Floristic Region (CFR), which is the smallest and richest for its size of only six floral kingdoms in the world. The CFR is also one of 36 global biodiversity hotspots. A biodiversity hotspot is a species-rich area exhibiting high levels of endemism (70% in the case of the CFR) and that is under threat of extinction. The CFR is considered the ‘hottest hotspot’, because it is home to the greatest concentration of higher plant species in the world outside of the tropics, and is therefore one of the global conservation priorities.

The Cape Town municipal area is less than 3% of the CFR, yet encompasses one third (>3 300) of the CFR's plant species and 11 of South Africa's 55 Critically Endangered vegetation types. Seven national vegetation types are endemic to the city and can only be conserved here. At least 190 plant species are locally endemic and over 400 plant species are classified as threatened, with 14 already globally extinct or extinct in the wild (CCT Biodiversity Report, 2018). The exceptionally high richness and uniqueness of Cape Town's biodiversity relates to the four local centres of plant endemism that occur here (Holmes et al., 2012).

The CCT is also home to an impressive array of terrestrial vertebrate fauna (Table 2). Amongst these, 52 are classified as Species of Conservation Concern (SCC) and 29 are considered threatened. The amphibian diversity in Cape Town is particularly significant with four species locally endemic.

*Table 2: Summary of Cape Town's fauna diversity and conservation significance*

<b>Class</b>	<b>Species</b>	<b>Species of Conservation Concern</b>	<b>Threatened</b>
Mammals	74*	7	4
Birds	395	26**	16**
Reptiles	62*	3	1
Frogs	28	12	5
Fish***	7	4	4
<b>Total</b>	<b>566</b>	<b>52</b>	<b>30</b>

\* Excluding marine species

\*\* Excluding pelagic bird species

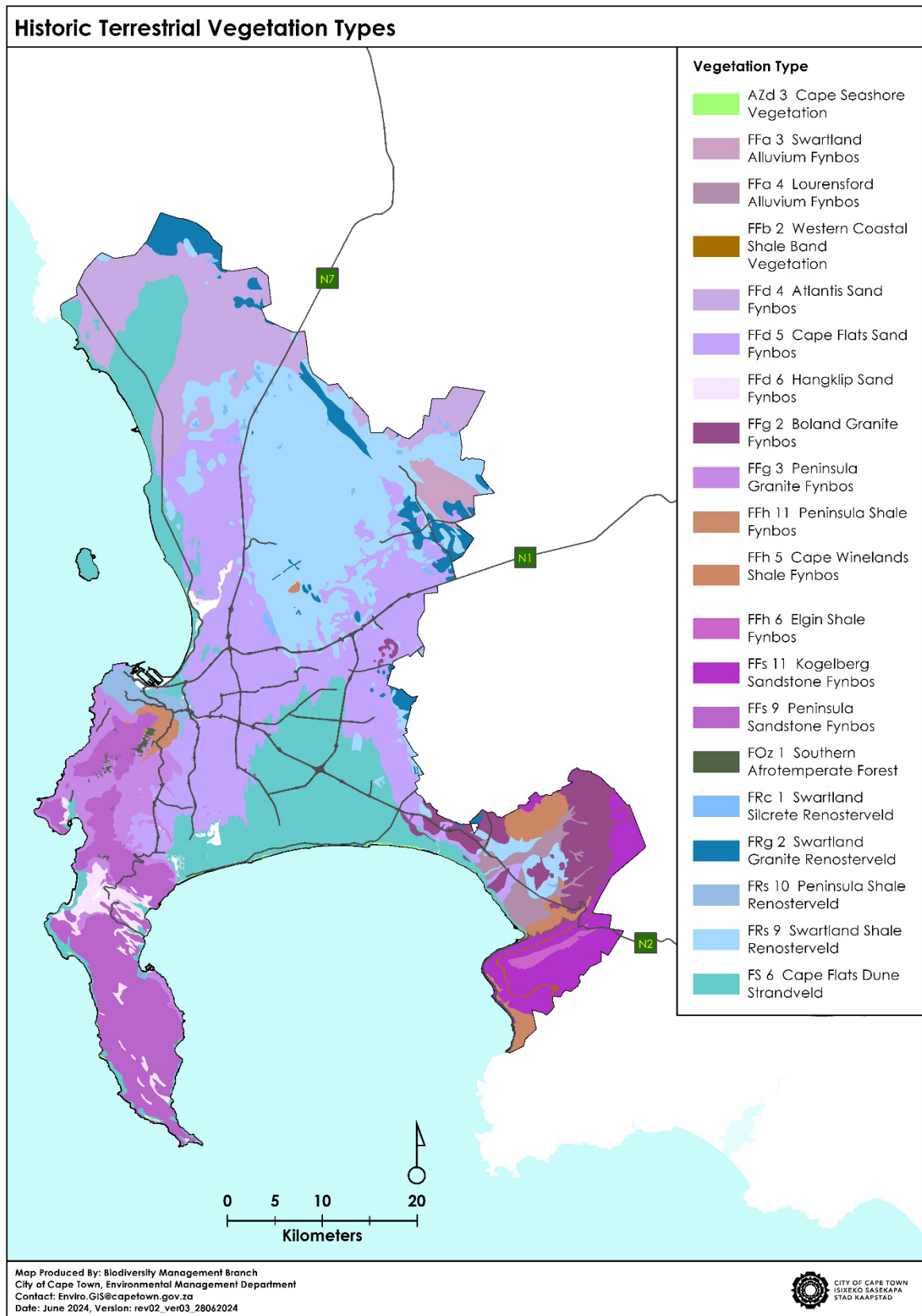
\*\*\* Undergoing taxonomic review

<sup>5</sup> Thomas Elmqvist, leader of United Nation's City and Biodiversity Outlook Project

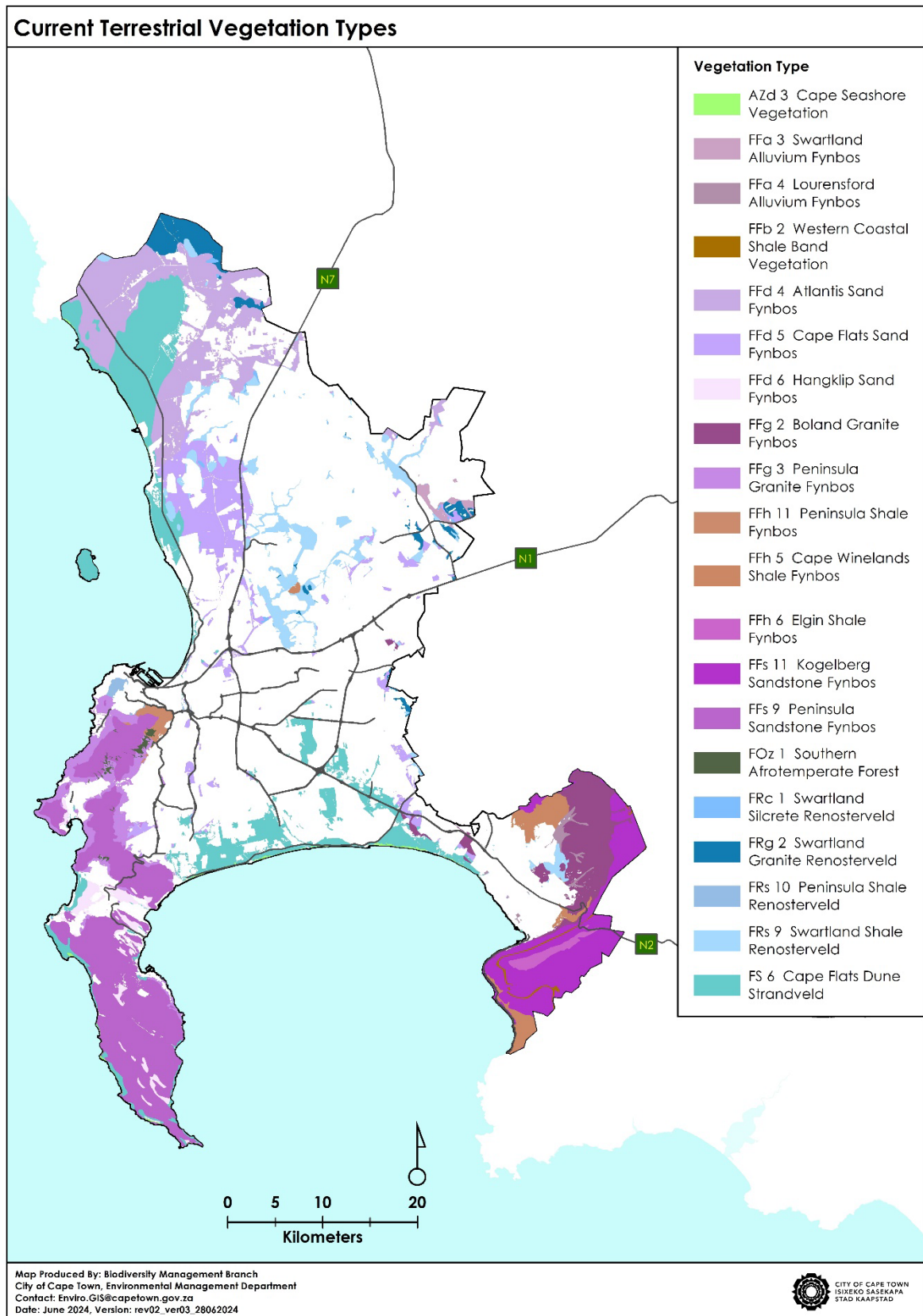
Intact natural ecosystems not only support biodiversity, but deliver many ecosystem services, and thus are essential components of sustainable development. The natural environment underpins tourism, one of the most important industries in promoting employment opportunities. The natural environment also plays an important role in mitigating global climate change and building resilience in climate change adaption strategies, as outlined in the Cape Town Climate Change Strategy (2021).

## **12 Terrestrial Ecosystems**

The CCT encompasses 20 major national terrestrial vegetation types, and four azonal, smaller types.



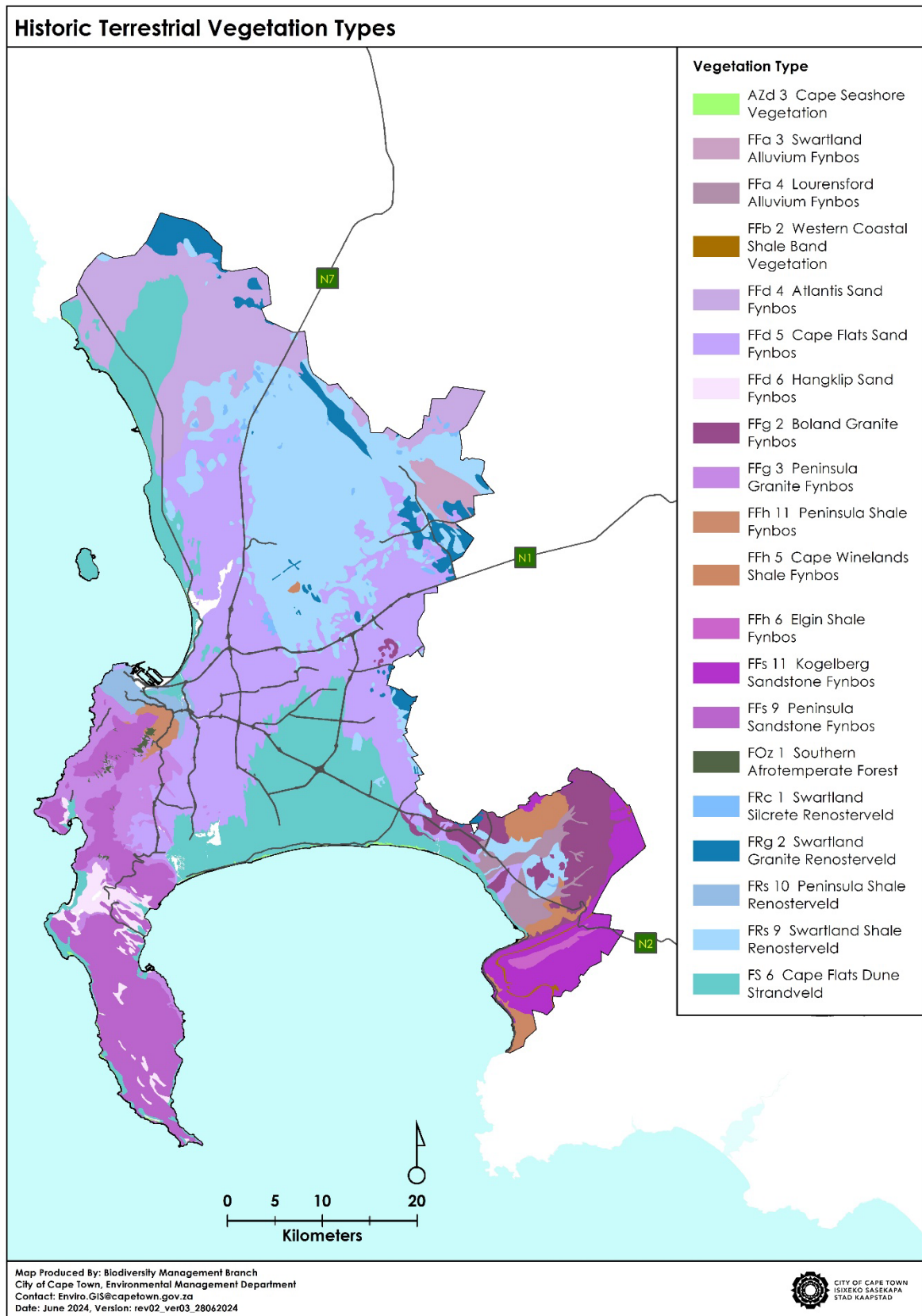
Map 2 shows the historic extent of national vegetation types and



Map 3 shows the current remnant extent of national vegetation types. Table 3 lists the national vegetation types, their respective areas remaining, areas required for national biodiversity targets and their latest national ecosystem threat status. Eleven

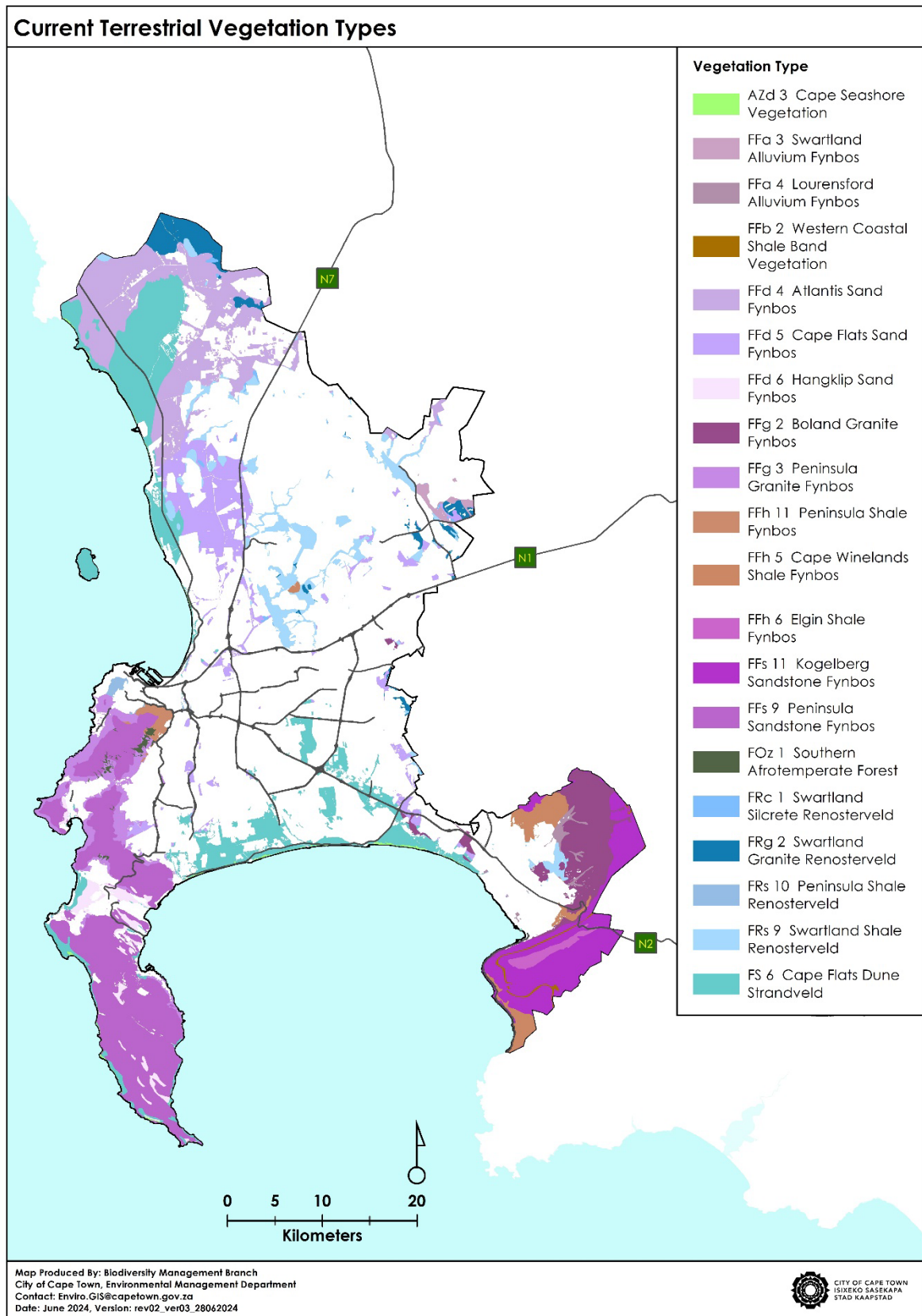
of the national vegetation types that occur in Cape Town are Critically Endangered, seven are Endangered, one is Vulnerable, and only one Least Concern (RLE 2022, Table 3). For detailed descriptions of vegetation types, refer to Rebelo et al. (2006).

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Map 2: Historic distribution of vegetation in Cape Town





Map 3: Current distribution of vegetation in Cape Town

Table 3: Summary of the extent and status of the vegetation types in Cape Town

National Vegetation Type	Historic extent in SA (km <sup>2</sup> )	Historic extent in CCT (ha)	2024 remaining in CCT (ha)	2024 remaining in CCT %	National Threat Status (RLE 2022)	National Biodiversity Target (%)	Can the Target be met for CCT?	Protection level (NBA 2018)
Atlantis Sand Fynbos	689	25 815	14 685	56.88	EN	30	Yes	Poorly protected
Boland Granite Fynbos	524	9 580	5 690	59.39	EN	30	Yes	Well protected
<b>Cape Flats Dune Strandveld</b>	<b>399</b>	<b>40 056</b>	<b>17 785</b>	<b>44.40</b>	<b>EN</b>	<b>24</b>	<b>Yes, already met</b>	<b>Moderately protected</b>
<b>Cape Flats Sand Fynbos</b>	<b>577</b>	<b>54 013</b>	<b>5 783</b>	<b>10.71</b>	<b>CR</b>	<b>30</b>	<b>No</b>	<b>Not protected</b>
Cape Seashore Vegetation	220	440	333	75.69	LC	20	Yes, already met	Well protected
Cape Winelands Shale Fynbos	84	4 049	2 268	56.01	CR	30	Yes, already met	Well protected
Elgin Shale Fynbos	279	841	332	39.42	CR	30	Yes, already met	Poorly protected
Hangklip Sand Fynbos	89	3 268	1 822	55.77	CR	30	Yes, already met	Moderately protected
Kogelberg Sandstone Fynbos	914	9 489	9 163	96.56	CR	30	Yes, already met	Well protected
<b>Lourensford Alluvium Fynbos</b>	<b>36</b>	<b>3 585</b>	<b>229</b>	<b>6.38</b>	<b>CR</b>	<b>30</b>	<b>No</b>	<b>Poorly protected</b>
<b>Peninsula Granite Fynbos</b>	<b>92</b>	<b>9 183</b>	<b>3 952</b>	<b>43.04</b>	<b>CR</b>	<b>30</b>	<b>Yes</b>	<b>Poorly protected</b>
<b>Peninsula Sandstone Fynbos</b>	<b>219</b>	<b>21 909</b>	<b>21 006</b>	<b>95.88</b>	<b>CR</b>	<b>30</b>	<b>Yes, already met</b>	<b>Well protected</b>
<b>Peninsula Shale Fynbos</b>	<b>13</b>	<b>1 263</b>	<b>660</b>	<b>52.23</b>	<b>VU</b>	<b>30</b>	<b>Yes, already met</b>	<b>Well protected</b>
<b>Peninsula Shale Renosterveld</b>	<b>25</b>	<b>2 350</b>	<b>274</b>	<b>11.65</b>	<b>CR</b>	<b>26</b>	<b>No</b>	<b>Poorly protected</b>
Southern Afrotemperate Forest	775	348	345	99.35	EN	22	Yes, already met	Well protected
Swartland Alluvium Fynbos	477	2 446	273	11.16	EN	30	<b>No</b>	Poorly protected
Swartland Granite Renosterveld	951	6 951	1 784	25.66	EN	26	No	Not protected
Swartland Shale Renosterveld	4 964	45 652	3 415	7.48	CR	26	No	Not protected
Swartland Silcrete Renosterveld	101	1 091	149	13.65	CR	26	No	Not protected
Western Coastal Shale Band Vegetation	134	317	316	99.67	EN	30	Yes, already met	Well protected

CR = Critically Endangered, EN = Endangered, VU = Vulnerable, LC = Least Concern

7 vegetation types **endemic to CCT are in bold.**

Excludes 4 azonal vegetation types: Cape Estuarine Salt Marshes, Cape Inland Salt Pans, Cape Lowland Freshwater Wetlands &amp; Freshwater Lakes.



## 12.1 Sand Fynbos

Cape Town has three types: Cape Flats Sand Fynbos, which is endemic to the city; Hangklip Sand Fynbos, which occurs on the Cape Peninsula; and Atlantis Sand Fynbos, which occurs on the sandy flats in the north-western parts of the city (Table 3). Sand Fynbos occurs on moderately undulating and flat plains on leached, acidic tertiary sand. The vegetation comprises dense, moderately tall, ericoid-leaved shrubland containing scattered emergent tall shrubs. Common ericoid shrubs include *Metalasia densa*, *Staavia radiata*, *Erica*, *Phyllica* and *Passerina* species. Proteoid and restioid fynbos are the dominant structural types, with asteraceous and ericaceous fynbos occurring in drier and wetter areas, respectively. All three Sand Fynbos types are species-rich and contain a number of local endemic plant species: for example, *Erica margaritacea* in Cape Flats Sand Fynbos and *Leucospermum parile* in Atlantis Sand Fynbos.

## 12.2 Alluvium Fynbos

Cape Town has two types: Lourensford Alluvium Fynbos, which is endemic to the city; and Swartland Alluvium Fynbos, which extends north of the city (Table 3). Alluvium Fynbos is either found on low-lying plains with duplex, silty soils or on granite and shale metasediments often with small cobbles and pebbles embedded. They are medium to dense shrublands with a short graminoid understorey. Structurally, restioid and asteraceous fynbos are dominant, although there is some evidence that proteoid fynbos might once have been dominant. Some remnants, such as Harmony Flats Nature Reserve, are exceptionally rich in bulbs. Daisies such as *Athanasia*, *Stoebe* and *Marasmodes* species and grasses (*Themeda triandra* and *Tribolium uniola*) are common.

## 12.3 Granite Fynbos

Cape Town has two types: Peninsula Granite Fynbos, which is endemic to the Cape Peninsula; and Boland Granite Fynbos, which extends to the north-east of the city (Table 3). Granite Fynbos occurs on moderately undulating plains and hills or on steep to gentle slopes below the sandstone mountain slopes, with soils varying from extensive and deep, to localised deep soils between large granite domes and sheets. Structurally it is described as a fairly dense, 1–2 m tall closed shrubland with occasional low, gnarled trees dotted through the landscape. It is a diverse type, dominated by scrub, asteraceous and proteoid fynbos, but with patches of restioid and ericaceous fynbos in wetter areas. Waboomveld (with *Protea nitida* overstorey) is very typical and extensive within Granite Fynbos. On the Cape Peninsula, groves of Silver Trees (*Leucadendron argenteum*) occur on the wetter slopes. Local endemic species

include *Leucospermum grandiflorum* in Boland Granite Fynbos and *Hermannia micrantha* in Peninsula Granite Fynbos.

## 12.4 Sandstone Fynbos

Cape Town has two types: Peninsula Sandstone Fynbos, which is endemic to the Cape Peninsula Mountain Chain; and Kogelberg Sandstone Fynbos, which extends to the south-east of the city (Table 3). Sandstone Fynbos occurs from sea level to high mountain peaks, on steep to gentle slopes, and on undulating plains and hills of varied aspect. The soils are acidic lithosols derived from Ordovician sandstones of the Table Mountain Group (Cape Supergroup). The general structure of the vegetation is a low, closed shrubland with scattered emergent tall shrubs. Proteoid, ericaceous and restioid fynbos dominate, while asteraceous fynbos is rare. Patches of thicket or scrub fynbos are common in rocky outcrops. Numerous seeps and seasonally saturated mountain-plateau wetlands (locally called 'suurvlakte') are very common and support restioid and ericoid (dominated by Bruniaceae) fynbos. Both of these vegetation types are extremely species-rich with a staggeringly high concentration of local endemic species (>130 in each). Examples are *Mimetes fimbriifolius* and *Leucadendron strobilinum* on the Cape Peninsula, and *Erica sitiens*, *Leucospermum bolusii* and *Aspalathus acanthiloba* on the Kogelberg.

Western Coastal Shale Band vegetation (Table 3) is a narrow 80–200 m linear feature nested within Sandstone Fynbos and extends eastwards from the Kogelberg range. Within the city, the shale band supports proteoid fynbos shrublands.

## 12.5 Shale Fynbos

Three types occur in higher rainfall areas where the shale soils are sufficiently leached of nutrients: Peninsula Shale Fynbos, endemic to the Cape Peninsula; Cape Winelands Shale Fynbos, which extends north-east of the city; and Elgin Shale Fynbos, which extends to the east of the city (Table 3). Shale Fynbos occurs on moderately undulating plains and steep slopes against the mountains. Soils are acidic, moist clay-loams. Vegetation structure is an open to medium-dense tall proteoid shrubland over a matrix of moderately tall and dense evergreen shrubs, dominated by proteoid, asteraceous and closed-scrub fynbos, with ericaceous fynbos in the wetter sites. A large portion of Elgin Shale Fynbos in the city is, or was until recently, under pine plantations and the flooded area of the Steenbras Dam. Many species are shared with Granite Fynbos and include several local endemics (e.g. *Leucadendron argenteum*, *L. daphnoides* and *Leucospermum grandiflorum*).

## 12.6 Strandveld

Cape Flats Dune Strandveld is endemic to the city (Table 3), and shares affinities with coastal thicket vegetation to the east and succulent karoo vegetation to the north. It occurs on flat to slightly undulating dune field landscapes. The soils are alkaline sands derived from Tertiary to recent calcareous sand of marine origin. Outcrops of limestone occur, particularly along the False Bay coastline. Structurally, strandveld is a tall, evergreen, hard-leaved shrubland with abundant grasses, annual herbs and succulents in the gaps. Examples of prominent shrub species include *Euclea racemosa*, *Metalasia muricata*, *Olea exasperata*, *Osteospermum moniliferum* and *Roepera flexuosa*. Strandveld has few local endemic species compared to fynbos, but one example is the succulent, *Lampranthus tenuifolius*.

Cape Seashore Vegetation (Table 3) was previously considered a community of strandveld that occurs predominantly on the unstable foredunes above the beaches. Structurally, it is an open herbaceous and dwarf shrubby vegetation often dominated by a single pioneer species. Characteristic species include *Pelargonium capitatum*, *Tetragonia decumbens*, *Didelta carnosa* and *Carpobrotus acinaciformis*.

## 12.7 Renosterveld

Cape Town has four types: Peninsula Shale Renosterveld which is endemic to the Cape Peninsula; and three other types which extend north of the city on their respective soil types: Swartland Granite, Swartland Shale and Swartland Silcrete Renosterveld (Table 3). Renosterveld occurs on soils with a heavier texture (clays and loams) where rainfall is not sufficiently high to leach out the nutrients (<600 mm per annum). Clay soils are derived from Malmesbury Group Shales, and loams from Cape Granite or silcrete parent materials. Renosterveld is mainly found in the moderately undulating lowlands and foot slopes. Structurally the vegetation is a cupressoid and small-leaved, open, low to moderately tall shrubland with many succulents, dominated by renosterbos (*Dicerothamnus rhinocerotis*). Grasses are a prominent component. Heuweltjies (termitaria) cause distinctive vegetation spots on the landscape and give the Tygerberg Hills their name. Groups of small trees and tall shrubs are associated with heuweltjies and rocky outcrops. Some renosterveld vegetation is rich in bulbs. Endemic plants include various Asteraceae, succulents and bulb species (e.g. *Marasmodes oligocephala*, *Lampranthus dilutus*, and *Babiana tubulosa*).

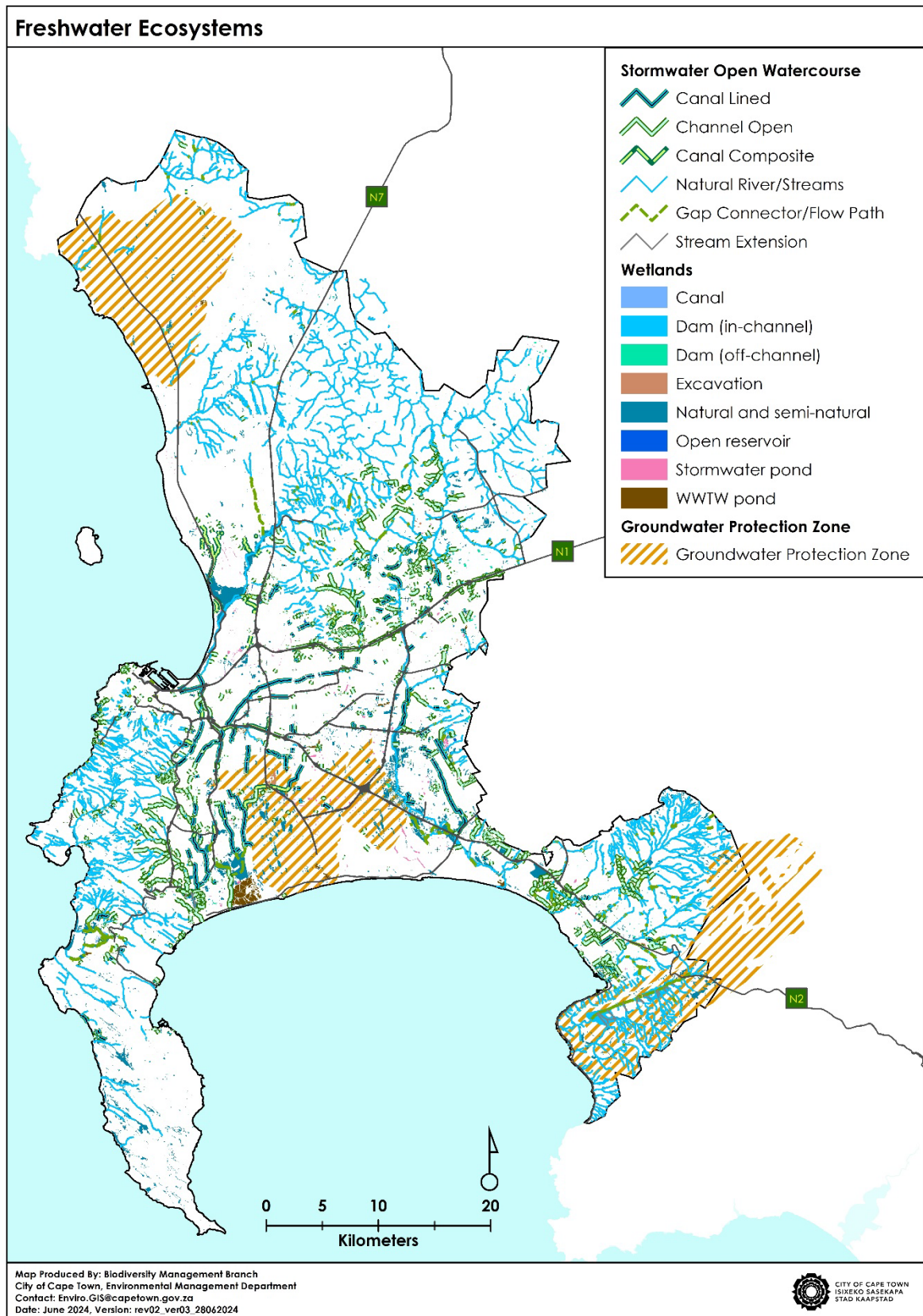
## 12.8 Southern Afrotropical Forest

Southern Afrotropical Forest occurs throughout South Africa (Table 3) on a variety of substrata. In the Mediterranean-climate areas of the CFR, Afrotropical Forest is

confined to fire-protected kloofs in the mountains. The emergent tree species have a subtropical affinity and are mostly widespread throughout South Africa. Tree species that occur naturally in Cape Town forest patches include *Podocarpus latifolius*, *Rapanea melanophloeos*, *Cunonia capensis*, *Curtisia dentata* and *Kiggelaria africana*.

### 13 Freshwater Ecosystems

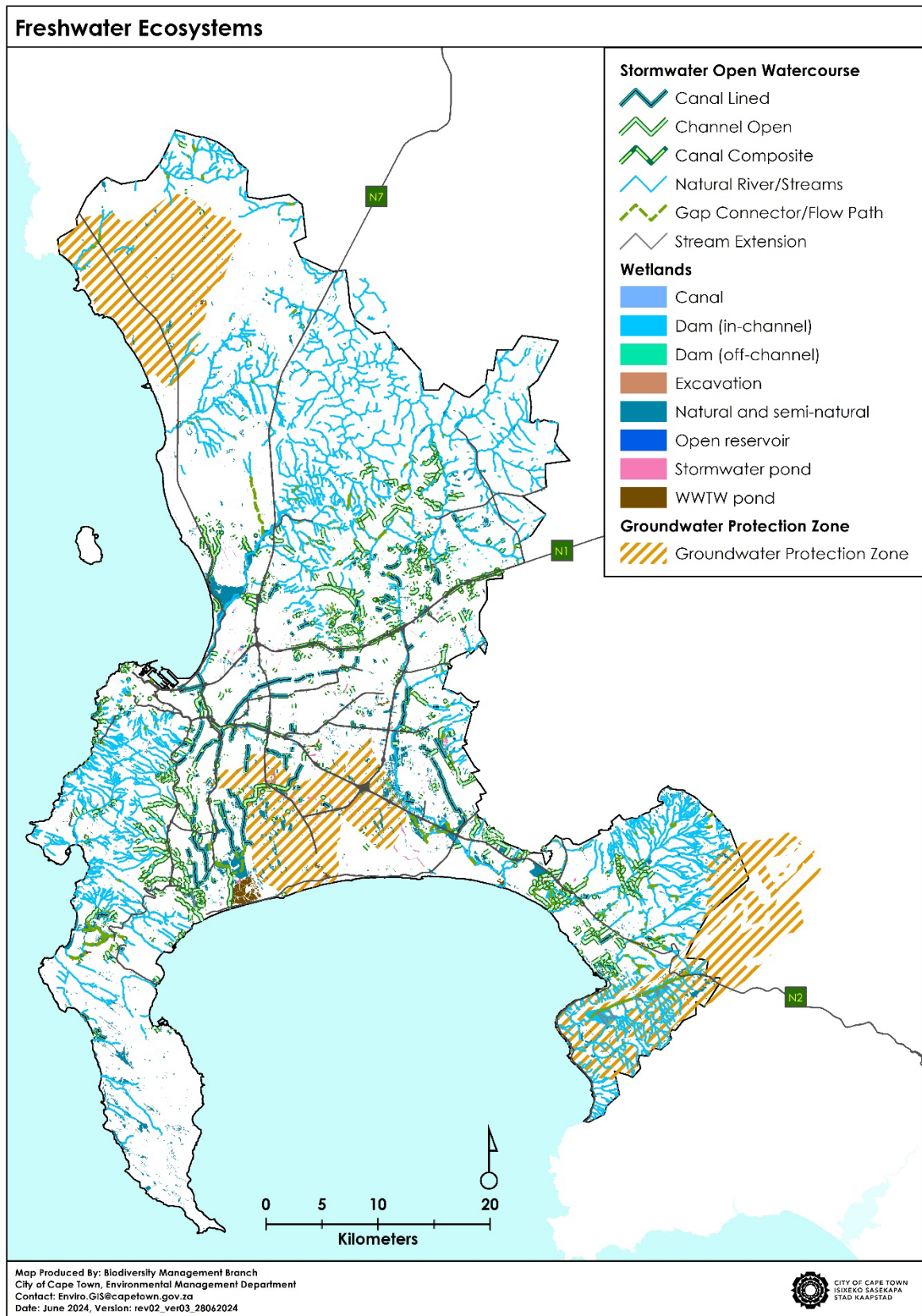
Freshwater or aquatic features include surface water ecosystems (wetlands, rivers and catchments) and groundwater (aquifers and groundwater protection zones) – refer to



Map 4 below. Four azonal vegetation types (surface water ecosystems) occur in Cape Town, namely Cape Estuarine Salt Marshes, Cape Inland Salt Pans, Cape Lowland Freshwater Wetlands and Freshwater Lakes.

Most of Cape Town's water supply comes from outside of the municipality. In order to ensure Cape Town's water security, we need to secure the catchments feeding the dams. Therefore, when considering freshwater features for Cape Town, an extended planning domain needs to be considered that includes the Greater Cape Town Water Supply dams and their quinary catchments.

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Map 4: Freshwater ecosystems in Cape Town



### 13.1 Wetlands

At the national vegetation mapping scale most of the large wetlands, such as Rondevlei, fall into the Cape Lowland Freshwater Wetlands type. Cape Lowland Freshwater Wetlands occur on the Cape Flats in landscape depressions, and may be permanently or seasonally flooded areas. Soils may be fine sands, silts or clays. Typically the vegetation in the seasonal wetlands comprises restio, sedge or rush-beds, as well as macrophytic vegetation embedded in the permanent waterbodies. Important species include *Senecio halimifolius*, *Paspalum vaginatum*, *Pennisetum macrourum*, *Triglochin bulbosa*, *Bolboschoenus maritimus* and *Juncus kraussii*. *Passerina paludosa* is endemic to seasonal marshes on the southern Cape Flats.

Cape Inland Salt Pans occur in areas that were formerly coastal lagoons that have been cut off from the sea and become seasonally dry. These estuarine wetlands are small depressions in the landscape dominated by low succulent scrub composed of creeping chenopods and salt-tolerant herbs and grasses.

As for the terrestrial ecosystems, wetlands in lowland areas are the highest conservation priority. Most seasonal vleis have been modified to perennial systems.

### 13.2 Rivers

The Cape Town bioregion has approximately 41 837 km of rivers, although only some upper reaches of the rivers are still in a natural or good ecological state. Three rivers inside protected areas are nationally recognised as Freshwater Ecosystem Priority Areas (FEPAs): Silvermine, Schusters and Steenbras Rivers; with some sections of the Diep recognised as Phase 2 FEPAs (Nel et al., 2011). Lowland river reaches generally are in a very poor ecological state as a result of surrounding developments. Significant stretches of most rivers have been canalised, have poor water quality, modified flows and abundant alien fish and plants. The ecological functioning and delivery of goods and services by these rivers have been severely reduced and many rivers require rehabilitation.

### 13.3 Groundwater

Many Fynbos Biome ecosystems are aquifer-dependant; they rely on groundwater base flows from aquifers to sustain the wetlands, streams and fynbos vegetation, particularly through seasonal and longer-term drought periods.

The Table Mountain Group Aquifer is a fractured rock system, with groundwater confined to faults, joints and bedding planes in the quartzite. Rivers, estuaries, wetlands and seeps have been identified as being the most vulnerable to changing

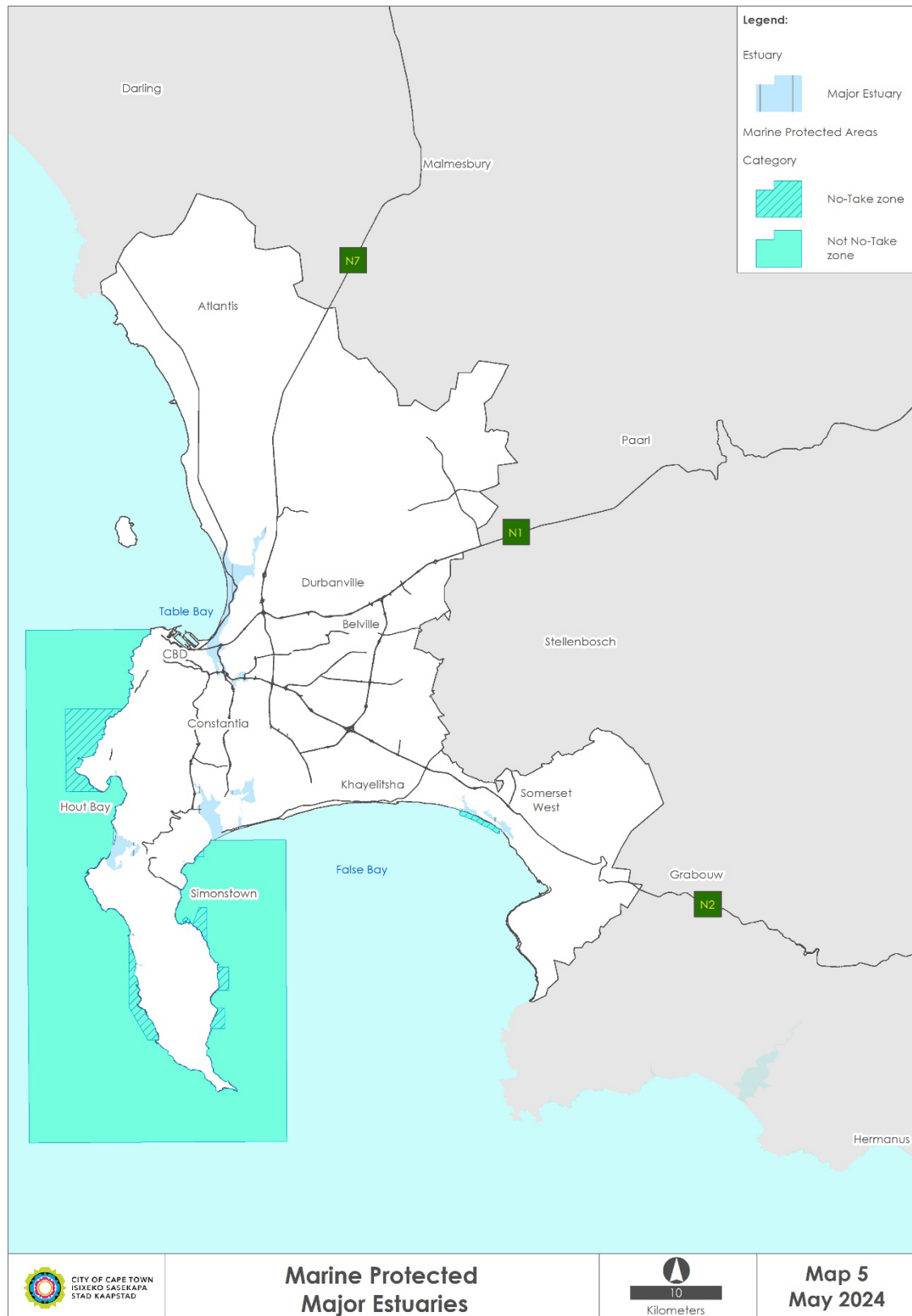


groundwater conditions. It is estimated that less than 5% of rain directly enters a stream during and immediately after a rainfall event. Rather, the rainfall rapidly percolates into the groundwater and the streams are fed by base flow from the groundwater.

The Cape Flats Aquifer and Atlantis Aquifer are inter-granular (sandy), unconfined, shallow water aquifers that occur between depths of 0.3 m and 3 m, and are critically important to the functioning of the local ecosystems. They also face threats from pollution, salt water intrusion and over abstraction.

## **14 Marine Ecosystems**

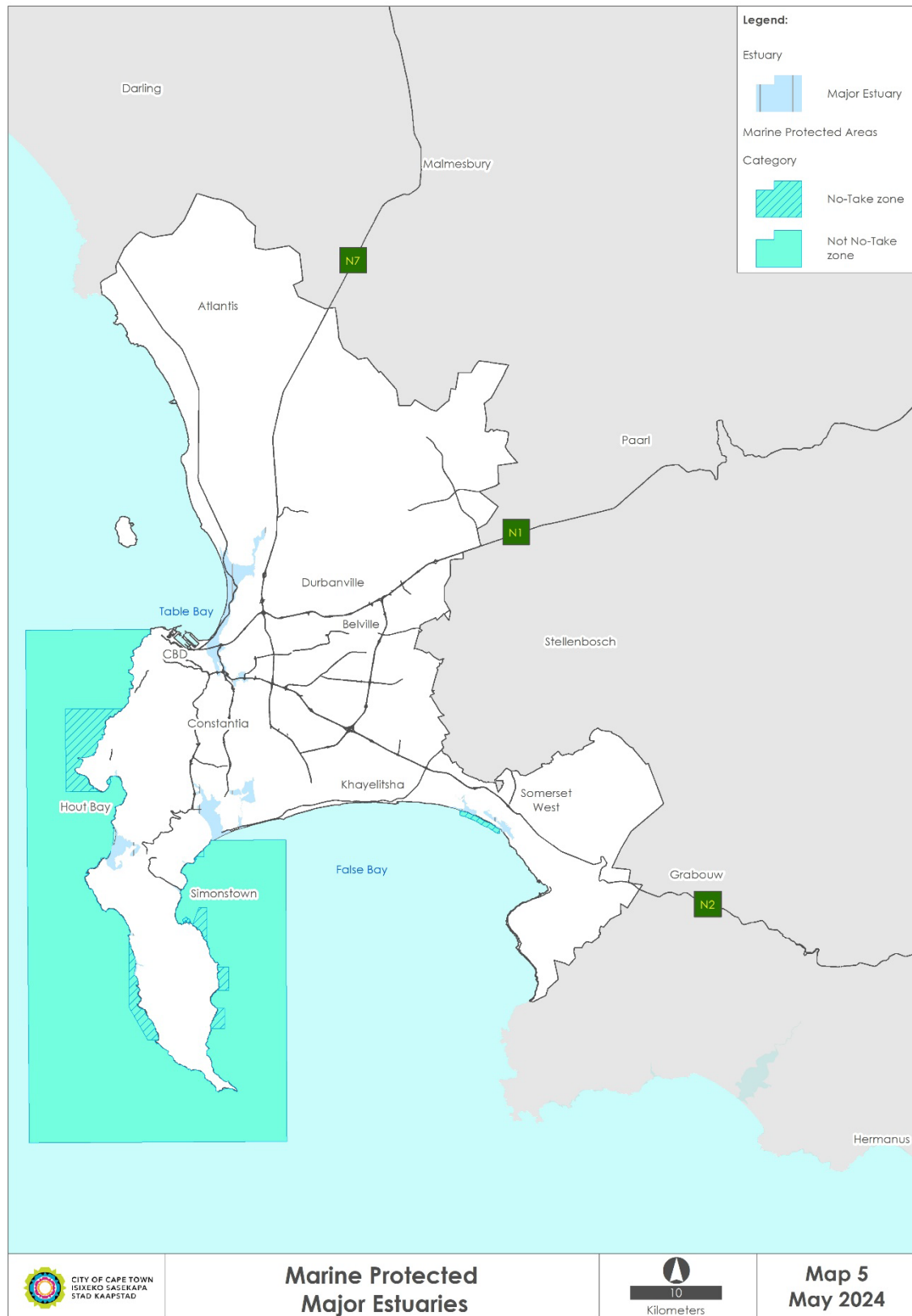
The CCT administers 307 km of coastline, extending from Silwerstroomstrand on the Atlantic side to Kogel Bay on the east side of False Bay. Cape Town's coastal zone is defined as the strip of inshore coastal waters ( $\pm 5$  km), including additional controlled zones and Marine Protected Areas (



Map 5) that fall outside of this 5 km buffer, up to the high water mark. This coastal zone contains different coastal landforms such as sandy beaches, rocky shores, tidal pools,

estuaries, islands, coastal dunes and sea cliffs. Coastal and terrestrial ecosystems are inextricably linked, with the interface defined as the inter-tidal zones and estuaries.

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Map 5: Marine Protected Areas and major estuaries in Cape Town

## 14.1 Coastline

Cape Town's coastline is highly sensitive, dynamic and diverse. It supports a rich marine biodiversity especially of algae (seaweeds) and invertebrates, a variety of ecological systems and associated ecosystem services. It is among the most ecologically diverse and productive coastal environments in the world (Know Your Coast, 2021). As such, it is an important part of our natural heritage.

Cape Town's coastline is also one of the CCT's greatest economic and social assets, because it provides a range of opportunities, including recreational activities and amenities, subsistence fishing, sought-after housing and development opportunities. However, as a result of the benefits associated with living close to the coast, it is becoming subject to increasing anthropogenic pressures. Thus the extent of coastal systems able to yield productive and valuable ecosystem services is declining at a rapid rate, with social, economic, environmental and aesthetic consequences.

It is important to maintain an ecologically functional coastline, because it provides an effective buffer to the city from storm surges. The CCT is committed to finding a balance between promoting the socio-economic value of the coast, while ensuring the integrity of the coast is preserved into the future.

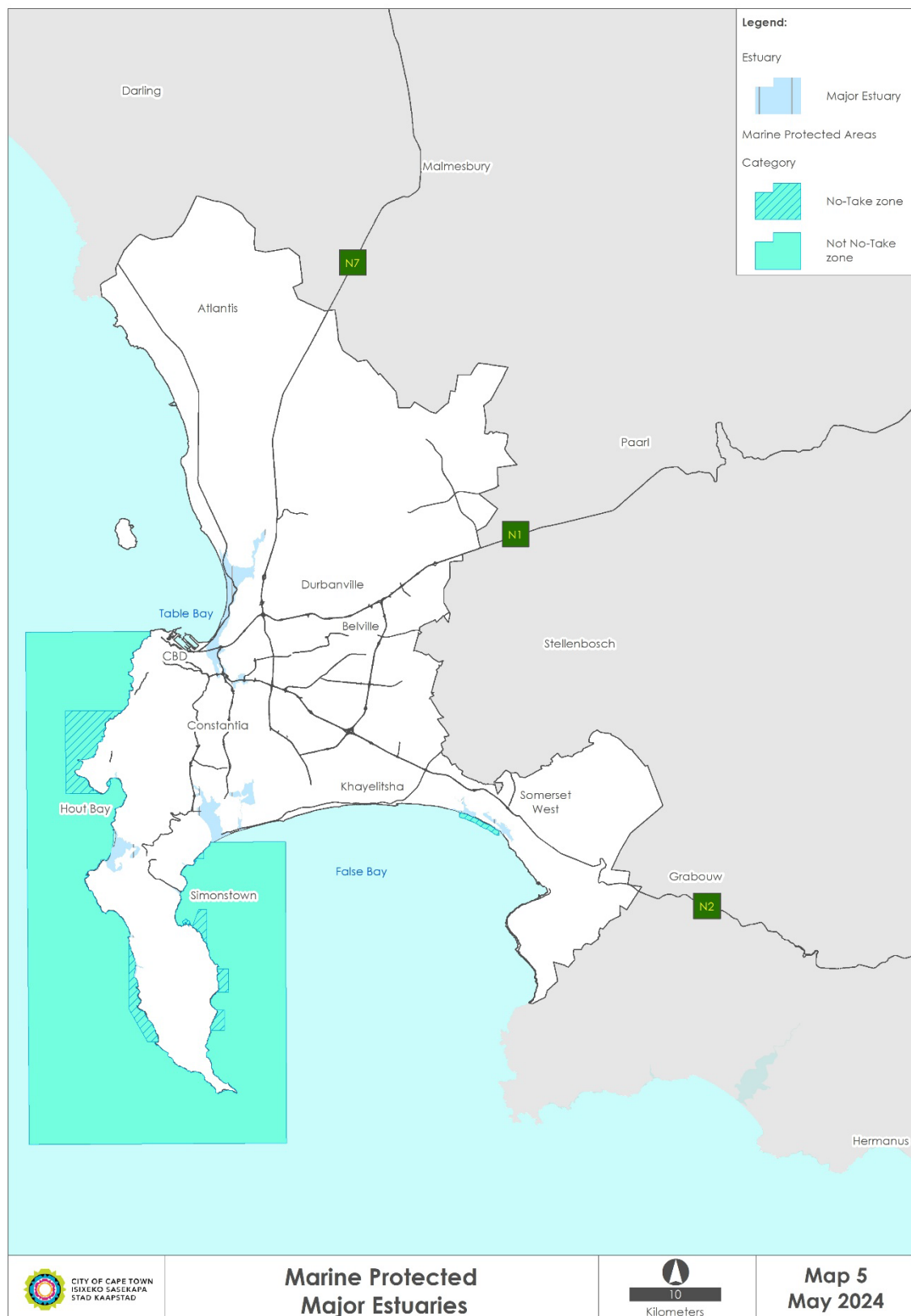
## 14.2 Intertidal Zone

The inter-tidal zone within the bioregion consists of sandy beaches and rocky shores. It is a high energy coastline making the sandy areas unstable and inhospitable to most species. In contrast, the rocky shores have much higher species richness owing to the diversity of microhabitats within this zone. The sub-tidal rocks provide a substrate for kelp beds (*Ecklonia* species) to establish. Rocky reef systems are also common.

## 14.3 Estuaries

Estuaries connect the land with the sea; and a transition between the marine and freshwater ecosystems. They are important ecosystems and require intact adjacent marine and terrestrial ecosystems to function well. They are also directly influenced by the ecological integrity of the respective catchment area. Cape Town's estuaries are a mix of vegetated depressions and flats, and sandy channels.

Cape Town has two major estuaries at Diep River (Milnerton Lagoon) and Zandvlei (

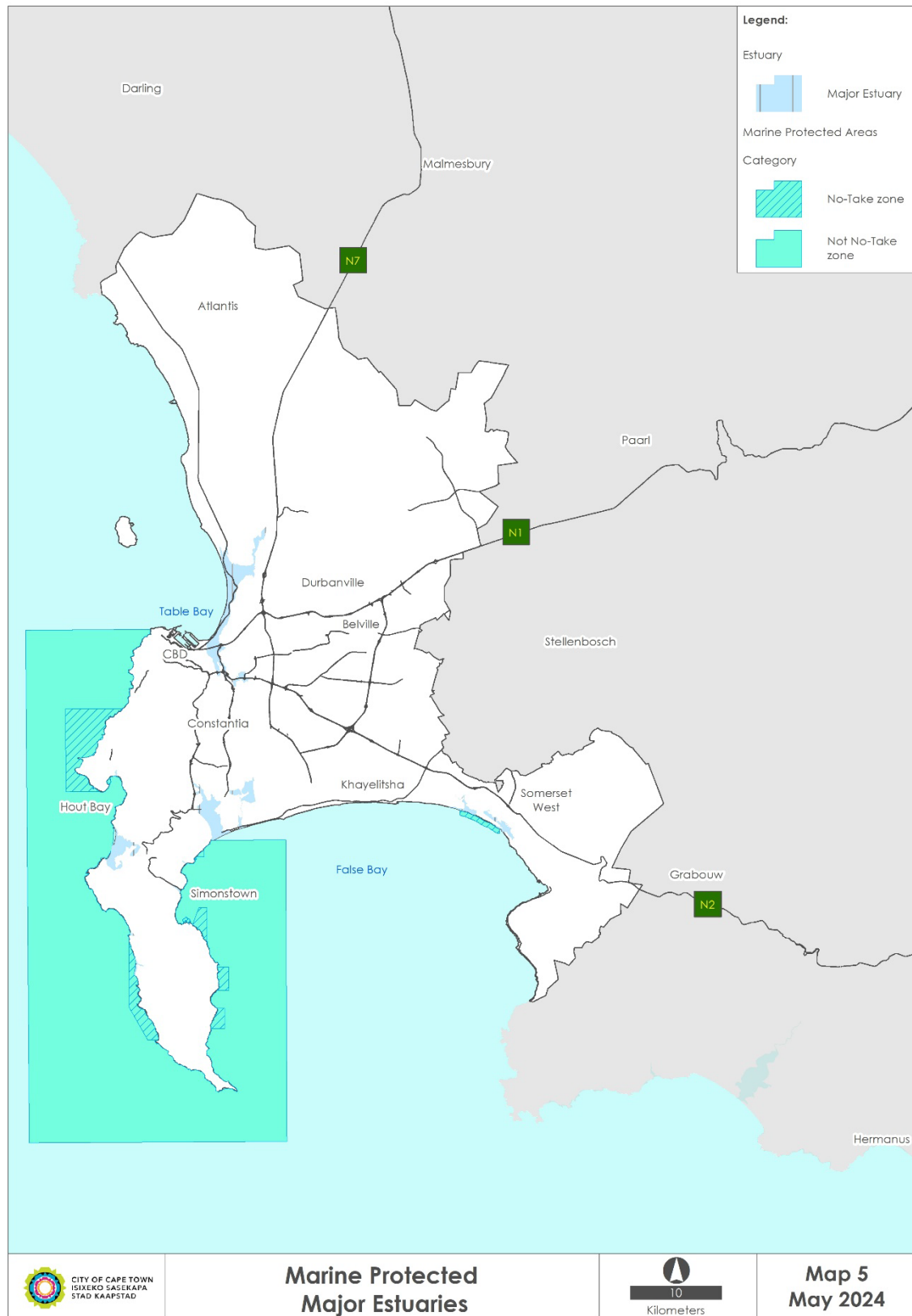


Map 5). There are several smaller estuaries and river mouths along the coastline. Estuaries suffer immense development and pollution pressures, with discharge regimes that are not natural. However, they are still critically important; and the two main

estuaries are recognised as national priorities in the National Coastal and Marine Spatial Biodiversity Plan 2022. Zandvlei is the last functioning estuary on the False Bay coastline. Zandvlei supports a wide variety of estuarine and freshwater fish, crustacean and bird species; and provides safe nursery habitat for fingerlings (juvenile fish). Estuaries are also important stopovers for migratory birds, because they offer rich feeding grounds in the shallow water.

#### **14.4 Marine Protected Areas**

Cape Town has three Marine Protected Areas (MPAs), on the Atlantic Coast, Cape Peninsula and False Bay Coast (



Map 5).

Robben Island MPA, managed by SANParks, was gazetted in 2019, with the purpose:



- To contribute to a national, regional and global representative system of marine protected areas by conserving and protecting coastal, island and offshore benthic and pelagic ecosystems in this region, including threatened ecosystem types.
- To conserve and protect the biodiversity and the ecological processes associated with these ecosystems.
- To contribute to the conservation and protection of threatened seabird and shorebird species including African penguin, Bank and Cape cormorants.
- To facilitate species management by supporting fisheries recovery and enhanced species abundance in adjacent areas for west coast rock lobster, abalone and other over-exploited species.
- To protect an area of significant cultural heritage, contributing to the tourism value of a South African National Heritage Site and World Heritage Site.
- To protect and provide an appropriate environment for research and monitoring and to promote and contribute to environmental education.

In 2004, Table Mountain National Park (TMNP) declared the MPA around the Cape Peninsula to help ensure that commercial and recreational use of the ocean's resources is sustainable. Its jurisdiction includes 1 000 km<sup>2</sup> of the seas and coastline around the Cape Peninsula. This has promoted the sustainable management of the coast, and secured specific restricted areas to protect its ecosystems and associated rich marine and coastal biodiversity. Fishing is allowed in the majority of the MPA – subject to valid permits, regulations and seasons. However, the MPA includes six restricted or 'no-take' zones where no fishing or extractive activities are allowed. These no-take zones are important breeding and nursery areas for marine life. By leaving these undisturbed there should ultimately be an increase in marine stock and threatened species are being given a chance to recover.

The Helderberg MPA was declared in 2000 with the intent to improve management of the area; increase marine and coastal monitoring and law enforcement; promote and expand marine and environmental education; and promote regular coastal clean-ups, arranged with the help of local communities and organisations. Helderberg MPA lies on the north-eastern side of False Bay, in Strand; within the jurisdiction of CCT and includes the last portion of relatively undisturbed sandy beach in False Bay. It comprises 4 km of sandy beaches with mobile dune systems that dominate the coastline in the area, with offshore low lying sandstone rocky reefs, kelp beds, sandy soft sediments and pelagic environments.

## 15 Important Ecological Corridors and Features

Several local-scale, expert-mapped ecological corridors are critical components of the Cape Town BioNet 2024. These include:

- a) False Bay corridor, linking the Cape Peninsula and Helderberg regions.

- b) Melkbosch-Duynefontein corridor, linking Blaauwberg and Koeberg Nature Reserves.
- c) Diep River Fynbos corridor, linking Table Bay and Blaauwberg Nature Reserves.
- d) Dassenberg Coastal Catchment corridor, which is one of the protected area expansion priorities for the Western Cape and links the provincial Riverlands Nature Reserve (immediately outside the CCT) to the West Coast at Silwerstroomstrand.
- e) Klipheuwel corridor linking a series of mainly Renosterveld remnants along the Klipheuwel formation from Klipheuwel town along the R304 towards the N1.
- f) Steenbras upper catchment, which links Steenbras Nature Reserve to Hottentot's Holland Nature Reserve, is critical to protect from both water security and biodiversity conservation perspectives.

Important Bird and Biodiversity Areas (IBAs) and large mammal home ranges are used to inform the 'upgrading' of unselected habitat remnants (Other Natural Areas) into the Ecological Support Area 1 (ESA 1) category in the final Cape Town BioNet 2024 classification. BirdLife South Africa recognises four IBAs in the city: Boulders Beach and Burghers Walk, False Bay Nature Reserve, Robben Island, and Table Bay Nature Reserve (Rietvlei).

Various open agricultural areas are included as Ecological Support Area 2 (ESA 2) in the Cape Town BioNet 2024, to accommodate home ranges and movement of larger mammals or Species of Conservation Concern.

## **16 Ecosystem Protection Level**

Cape Town's lowland ecosystems are under-conserved (refer to Table 3)

and a high conservation priority, both locally and nationally.

In 2009 only 35,62% of the BioNet was formally conserved. Since then the conservation estate in Cape Town has grown substantially. The June 2022 IDP target of 65% of the 2009 BioNet protected and managed for conservation was met. However, due to the loss of Driftsands Nature Reserve (abolished in November 2022), CapeNature's contribution to Cape Town's protected area network has decreased. The area for TMNP is now more accurately reported, and now mapped to cadastral boundaries rather than estimated based on remnant vegetation. Land that does not have a secure conservation status is not included in reporting. As of January 2025, Cape Town's protected area and conservation area network encompasses 55 702,91 ha of land, representing 65,53% of the baseline BioNet 2009 required to meet protected area targets (Table 4). This equates to 22,72% of the municipal area currently conserved. Protected Areas, conservation areas and CBAs now total 81 775,19 ha (33,35% of the current municipal area) compared to the c. 85 000 ha identified in 2009.

*Table 4: Conserved land in Cape Town*

<b>Management Authority</b>	<b>Area</b>	<b>BioNet<sup>2</sup></b>
City of Cape Town	20 044,80 ha	23,58%
SANParks (TMNP) <sup>3</sup>	24 669,31 ha	29,02%
CapeNature <sup>4</sup>	5 927,59 ha	6,97%
Eskom <sup>5</sup>	2 722,14 ha	3,20%
Stewardship (CapeNature & CCT sites)	2 339,07 ha	2,75%
<b>TOTAL</b>	<b>55 702,91 ha</b>	<b>65,53%</b>

<sup>1</sup> Percentage of the baseline BioNet 2009, as of 1 January 2025.

<sup>2</sup> Corporate Scorecard Target for June 2025 has been achieved.

<sup>3</sup> Table Mountain National Park (TMNP) was previously reported as an estimated 25 000 ha. TMNP was re-mapped to cadastral boundary and only secure erven are now reported on for Cape Town's conservation estate. A substantial area of land on the Cape Peninsula remains unresolved, without long-term status under the Protected Areas Act or perpetuity Biodiversity Stewardship (contractual law).

<sup>4</sup> CapeNature has not yet finalised the offset for the loss (deproclamation) of Driftsands Nature Reserve.

<sup>5</sup> Eskom reduced their conservation area to accommodate expansion of the nuclear facility.

## 17 Threats

The CCT overlaps with an extremely high concentration of unique biodiversity, making it very challenging to avoid negative impacts of urban development. There is a socio-economic imperative to deliver much needed housing and work opportunities. However, inappropriate and unplanned development constitute a significant threat to remaining biodiversity and to Cape Town's future sustainability.

17.1. The main direct threats to Cape Town's biodiversity include the following:

- a) Habitat loss, particularly due to inappropriate development including unlawful land occupation (land invasion);

- b) Invasive species, especially alien trees that form dense stands and alter fire regimes;
- c) Over-exploitation, especially overgrazing and unsustainable harvesting;
- d) Inappropriate fires (e.g. too-frequent and in the wrong season);
- e) Mowing, as it eliminates most perennial species;
- f) Pollution, particularly of wetlands and watercourses;
- g) Altered hydrology (e.g. through sewerage spills, stormwater, drainage, and over-abstraction);
- h) Mining, especially sand mining;
- i) Crime (e.g. dumping, poaching, land invasion, violent muggings and protest action) affects staff and visitor safety; and
- j) Climate change.

17.2. Other risks identified include:

- a) Closure of all nature reserves during a State of Emergency or State of Disaster; as occurred during the COVID-19 pandemic. The Covid-19 'hard lockdown' prevented public access to nature reserves and limited staff on site. This led to increased poaching and other illegal activities, including a significant increase in the pressure of unlawful land occupation at some sites.
- b) Disasters and State of Emergency declarations (especially for droughts and disease outbreaks) that can trigger Section 30(a) directives under NEMA. While due diligence is recommended, environmental authorisation via the usual EIA process is not required, and may result in unmitigated loss of biodiversity.
- c) Keeping the CCT Protected Areas relevant to their surrounding communities. Without buy-in, support and respect of the public, especially surrounding communities, nature reserves are at risk of land invasion. This requires addressing social needs while simultaneously protecting biodiversity assets.
- d) Continued and effective faunal management, together with human-wildlife conflict avoidance and mitigation.
- e) Inability to cope with environmental disasters such as water pollution (especially sewerage spill) events.

## 18 Areas of Potential Impact

Addressing the areas of potential impact or coincidence between biodiversity and competing land uses (especially urban development and mining) is an ongoing process between the EMD and other CCT Departments, State Departments and developers. The process of identifying and dealing with areas of potential impact is dealt with in detail in the DSDF Volume 4 Annexures.

The DSDF-EMF revision process resulted in the identification and avoidance of most of the areas of potential impact on Core 1 Biodiversity (conserved areas and CBAs), but

it is possible that more will come to light in future as further information becomes available and development pressures intensify.

Environmental authorisation is required for listed activities that are likely to have a significant impact on the environment, irrespective of this plan. For example, CBAs trigger an EIA in terms of Listing Notice 3 of the EIA Regulations under NEMA.

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## PART C: BIONET MAPS

### 19 Description of Cape Town BioNet Categories

The categories presented in the Cape Town BioNet 2024 from the fine-scale, systematic, spatial biodiversity planning analysis are described in Table 5. For further information on CBA map categories, consult the National Technical Guidelines for CBA Maps (SANBI, 2017) and the Lexicon of Spatial Biodiversity Assessment, Prioritisation and Planning (SANBI, 2023).

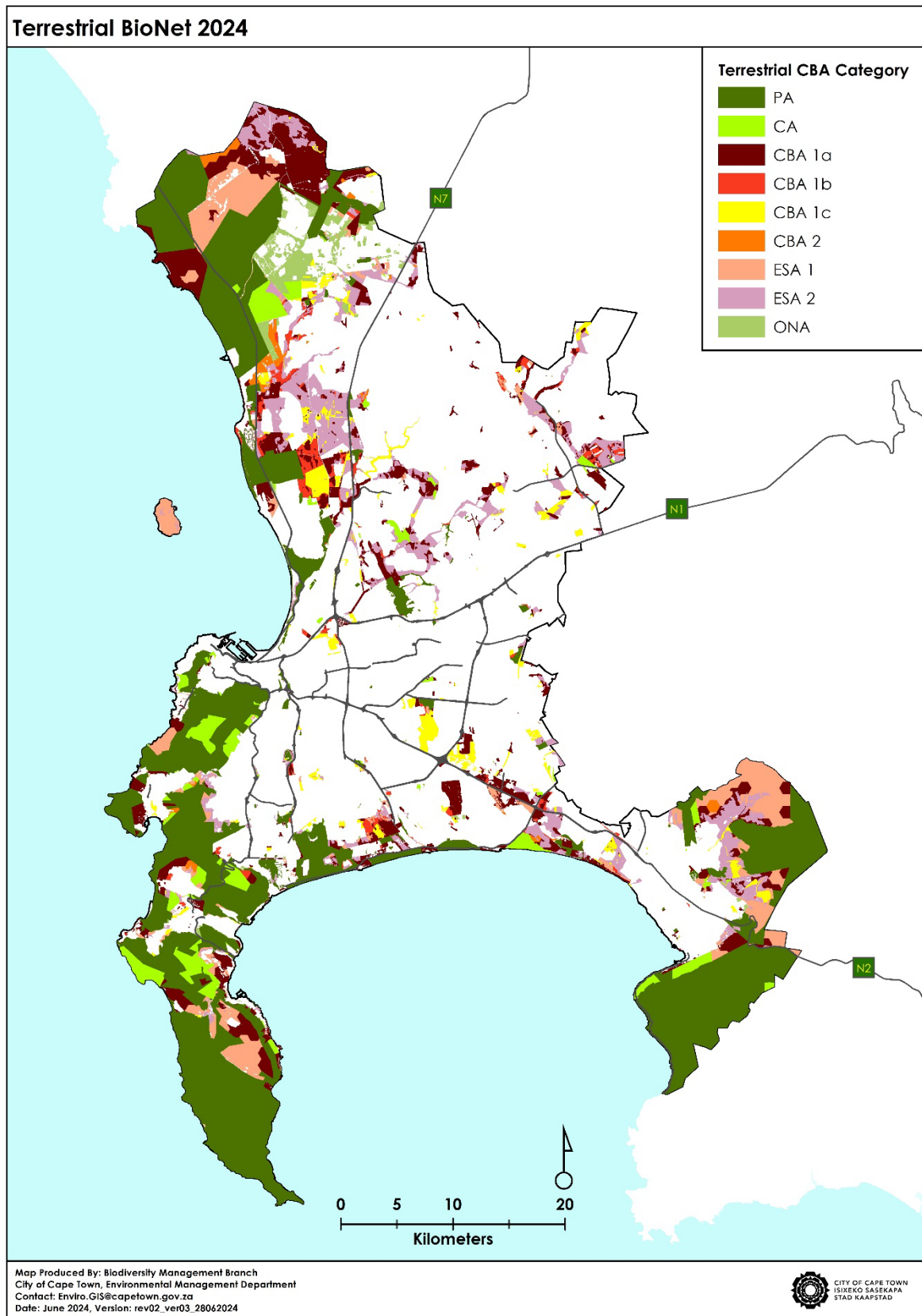
*Table 5: Description of categories in the fine-scale, systematic, spatial biodiversity planning analysis*

Category	Code	Description	Land Management Objective
Protected Area	PA	Protected Areas proclaimed in terms of NEMPAA such as Protected Environments (Section 18), National Parks (Section 20) and Nature Reserves (Section 23); and Contractual Stewardship Agreement sites with perpetuity title deed endorsements under the Western Cape Nature Conservation Board Act, 1998 (Act No. 15 of 1998).	To be maintained as Protected Areas.
Conservation Area	CA	New Protected Areas pending proclamation under NEMPAA; and Contractual Stewardship Agreement Sites signed for a limited time or without perpetuity title deed endorsements.	To be managed and maintained as Conservation Areas or upgraded to Protected Areas where appropriate.
Critical Biodiversity Area 1 (irreplaceable)	CBA 1	Non-protected terrestrial and aquatic features that are critical for conserving biodiversity and maintaining ecosystem function. Comprise the minimum set of high and medium condition remnants required to meet vegetation and species pattern and process biodiversity targets. Includes Critically Endangered remnants in poor condition that buffer higher condition remnants.	To be managed for biodiversity conservation purposes, restored where required and incorporated into the Protected Area network.
Critical Biodiversity Area 2 (optimal)	CBA 2	Remaining Critically Endangered remnants (i.e. 100% irreplaceable in terms of biodiversity targets) in poor (restorable) condition. CBA 2 is also assigned to natural wetlands that are a lower priority than CBA 1 wetlands.	To be restored and managed for biodiversity conservation purposes and incorporated into the Protected Area network.

Ecological Support Area 1	ESA 1	Natural areas essential for ecological function, connectivity and viability of CBA biodiversity elements.	To be managed for biodiversity conservation purposes, and restored where required.
Ecological Support Area 2	ESA 2	Transformed (e.g. extensive agriculture) sites with conservation importance for ecological function, faunal movement and viability of CBA biodiversity elements. This includes canalized rivers and wetlands in poor condition.	Current land-use should be maintained, or else restored to a more natural state.
Other Natural Area	ONA	Natural vegetation areas not required to meet biodiversity targets.	As per the CCT District EMF
No natural habitat remaining	NNR	Areas transformed by human activities, including urban and rural development, cultivated land and mines.	As per the CCT District EMF

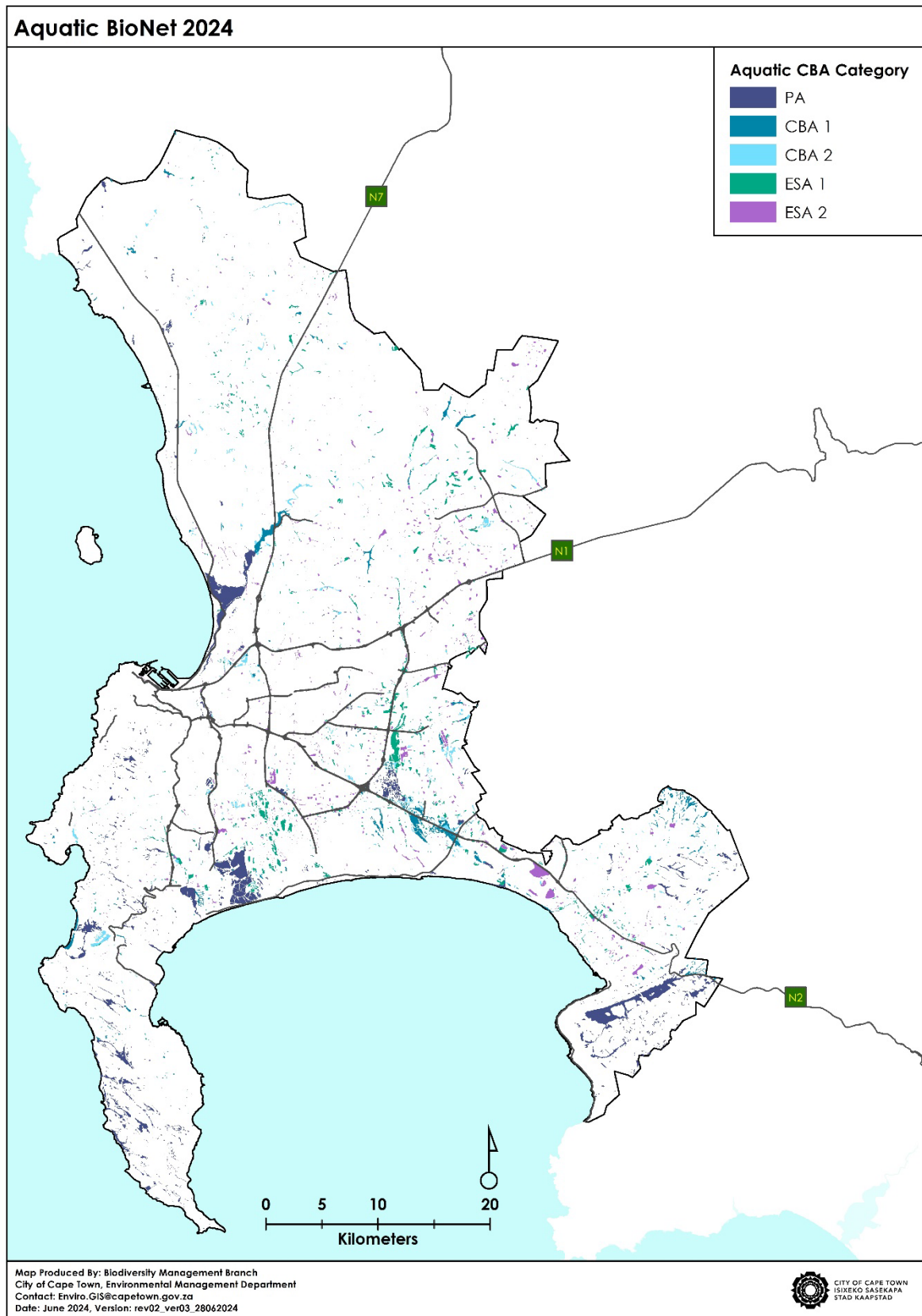
## 20 Critical Biodiversity Area Maps

The Cape Town Biodiversity Network 2024 is presented in a series of maps: Map 6 is the terrestrial CBAs, Map 7 is the aquatic CBAs and Map 8 is a composite map. Map 9 includes the extended planning domain. The scale at which these maps are presented here is very small and it is difficult to distinguish some of the features clearly. The maps are publically available in high resolution digital format for download from the CCT's City Map Viewer: <https://citymaps.capetown.gov.za/EGISViewer> and Open Data Portal: [https://odpcctegis.opendata.arcgis.com/datasets/4f2d7835518a4e6b8205ce12d77ff463\\_133/explore?location=-33.913196%2C18.654700%2C9.39](https://odpcctegis.opendata.arcgis.com/datasets/4f2d7835518a4e6b8205ce12d77ff463_133/explore?location=-33.913196%2C18.654700%2C9.39).

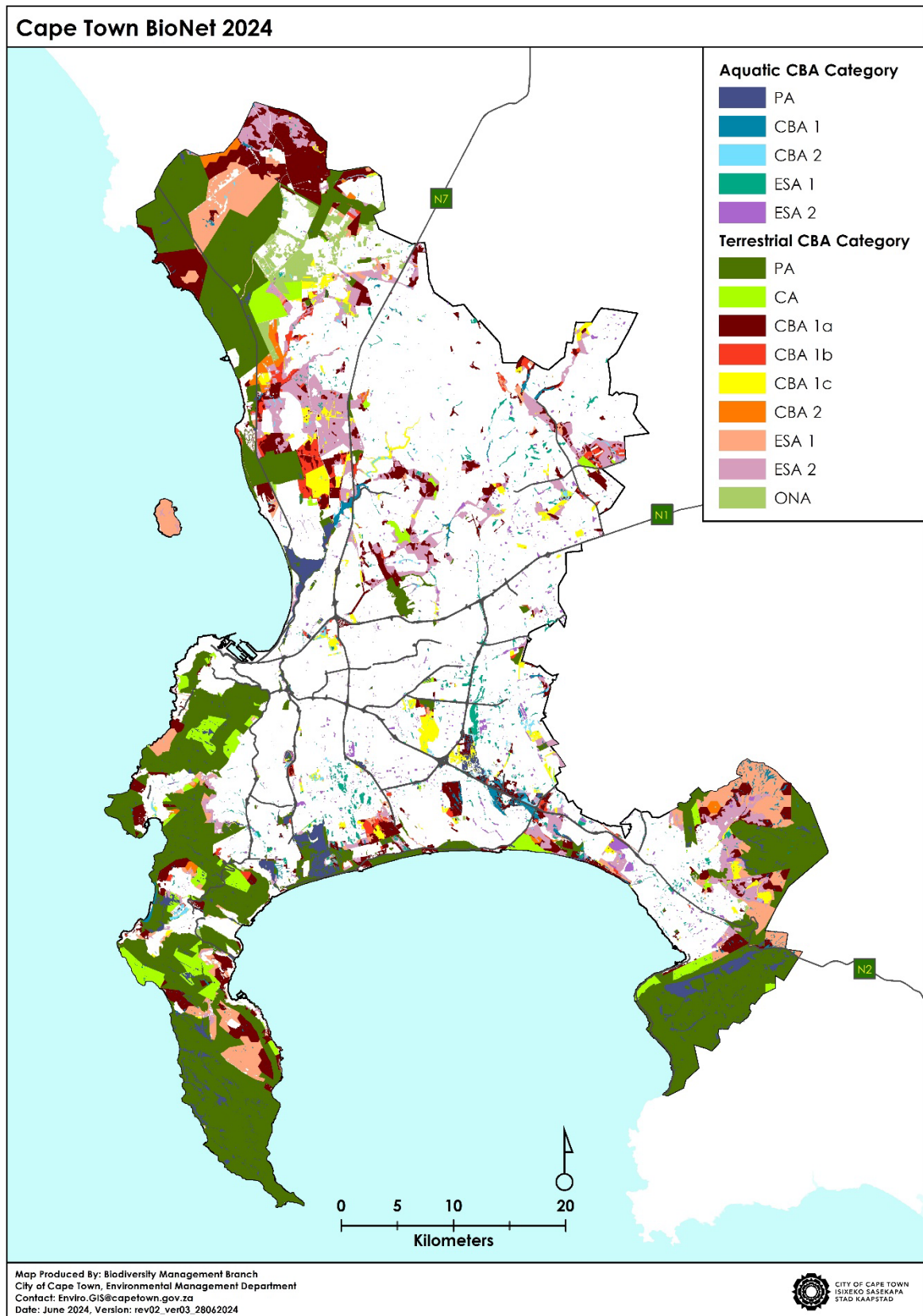


Map 6: Cape Town Terrestrial BioNet 2024

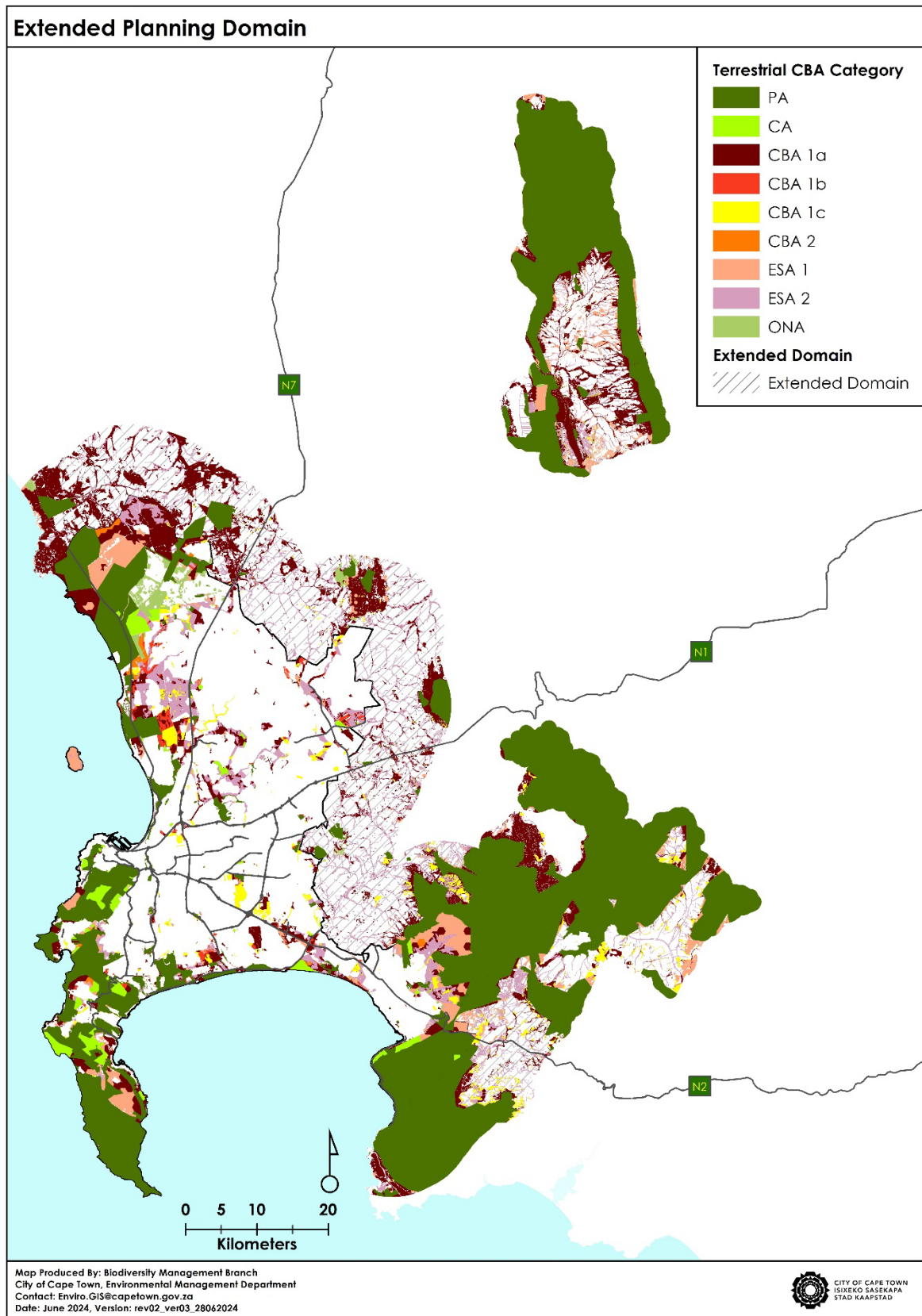




Map 7: Cape Town Aquatic BioNet 2024



Map 8: Combined Cape Town BioNet 2024



Map 9: Combined Cape Town BioNet with extended planning domain 2024

## **PART D: GUIDELINES FOR LAND-USE PLANNING AND DECISION MAKING**

Broad, generic environmental principles are provided below. Detailed land-use guidelines are listed in the DSDF documents. These are publically available on the CCT website: <http://www.capetown.gov.za/DSDF>.

Detailed land use recommendations, with descriptions of activities and related controls, are also included in the Western Cape Biodiversity Spatial Plan 2023: <https://www.capenature.co.za/western-cape-biodiversity-spatial-plan>.

### **21 Protected Areas**

Guidelines for the management of, and land use within, National Parks and Nature Reserves are provided for each Protected Area in its specific Protected Area Management Plan, as well as the NEMPAA Norms and Standards for the Proper Administration of Nature Reserves, 2012. These should be consulted.

#### **21.1 National Parks and Nature Reserves**

- a) Description
  - i. Declared in terms of the NEMPAA.
  - ii. Form part of the National Protected Area estate for the country.
  - iii. Listed in the South African Protected Areas Database (SAPAD).
- b) Significance of the habitat
  - i. Local, national, and international significance.
  - ii. Loss of habitat is likely to impact on some Species of Conservation Concern and may lead to the extinction or local extinction of species.
- c) Objectives
  - i. Conservation of biodiversity and watershed protection.
  - ii. Maintain natural ecosystems, restore degraded land to near-natural or natural condition, and manage for no further degradation.
  - iii. These sites should become valued assets to surrounding communities.
  - iv. Manage to avoid loss. Loss of part or all of a protected area may result in significant negative public perception.
- d) Action (immediate)
  - i. High priority.

- ii. Management plans are required and must be implemented, monitored and reviewed.
  - iii. Invasive alien species control programmes must be prioritised and implemented.
  - iv. Fire management plans, dictated by ecological informants, must be developed and implemented.
  - v. Legal boundaries must be surveyed and permanently marked.
  - vi. The management authority must strive to ensure that these sites are adequately resourced.
- e) Compatible activities
- i. Conservation (non-consumptive use).
  - ii. Low impact recreation, ecotourism and environmental education.
  - iii. Development on existing footprints only, or in adjacent degraded areas; and in accordance with the Protected Area zonation.
  - iv. Job creation through national programmes and EPWP.
  - v. Research by registered research institutions, subject to a CapeNature permit (as required) and landowner permission from the management authority.

## **21.2 Conservation Areas**

- a) Description
- i. State or privately owned sites that are secured as Biodiversity Agreements under the CapeNature Conservation Stewardship programme.
  - ii. Form part of the conservation estate for the country.
  - iii. Listed in the South African Conservation Areas Database (SACAD).
  - iv. May qualify for a higher status (Nature Reserve), but the landowner may not be willing to commit to a perpetuity agreement at the time of signing.
  - v. Publically owned sites may be in process to obtain a higher status, or they may not warrant a higher status.
- b) Significance of the habitat
- i. Local, and potentially national and international, significance.
  - ii. Loss of habitat could impact some Species of Conservation Concern and possibly lead to the extinction or local extinction of species.
  - iii. Loss is likely to result in an inability to attain biodiversity targets and a rapid degradation of the natural environment within the bioregion.
- c) Objectives
- i. Conservation of biodiversity and watershed protection.

- ii. Maintain natural ecosystems, restore degraded land and wetlands to a near-natural or natural condition, and manage for no further degradation.
- d) Action (1-5 years)
  - i. High priority.
  - ii. Ensure that the appropriate Conservation Stewardship category is obtained.
  - iii. Ensure that the site is managed according to the approved management plan; which must be monitored and reviewed in terms of the Conservation Stewardship contract.
  - iv. Invasive alien species control programmes should be prioritised and implemented as agreed in the Conservation Stewardship contract.
  - v. Conservation Stewardship site boundaries must be surveyed and permanently marked.
  - vi. Fire management plans, dictated by ecological informants, must be developed and implemented.
- e) Compatible activities
  - i. Low impact recreation, ecotourism and environmental education.
  - ii. Development on existing footprints only, or in adjacent degraded areas.
  - iii. Job creation through national programmes and EPWP, as agreed in the Conservation Stewardship contract.
  - iv. Research by registered research institutions, subject to a CapeNature permit (as required) and landowner permission.
  - v. No further expansion of agriculture into these areas should be permitted.

## 22 Critical Biodiversity Areas

Critical Biodiversity Areas (CBAs) are terrestrial and aquatic features in the landscape that are critical for conserving biodiversity and maintaining ecosystem functioning, but are not protected or conserved.

### 22.1 Critical Biodiversity Area 1a-c (irreplaceable)

- a) Description
  - i. CBA 1a (irreplaceable)

An area that is irreplaceable or near-irreplaceable for meeting biodiversity targets. There are no or very few other options for meeting biodiversity targets for the features associated with the site. Habitat condition is high or medium.
  - ii. CBA 1b (irreplaceable and low condition but key connector)



An area that is irreplaceable or near-irreplaceable for meeting biodiversity targets. There are no or very few other options for meeting biodiversity targets for the features associated with the site. Habitat condition is low but the site is important for connectivity.

iii. CBA 1c (irreplaceable and low condition)

An area that is irreplaceable or near-irreplaceable for meeting biodiversity targets. There are no or very few other options for meeting biodiversity targets for the features associated with the site. Habitat condition is low.

b) Significance of the habitat

- i. Local, national and international significance.
- ii. Loss of habitat could potentially impact some Species of Conservation Concern and possibly the extinction or local extinction of species.
- iii. Loss would result in an inability to attain biodiversity targets and a rapid degradation and fragmentation of the natural environment within the bioregion.

c) Objectives

- i. Highlight the significance of CBAs and ensure that they are used to influence all relevant spatial planning processes, plans and decision-making.
- ii. Secure formal protected area status where possible and appropriate.
- iii. Maintain natural ecosystems, restore degraded land to near-natural or natural condition, and prevent further degradation.
- iv. Strive to work with willing landowners to manage for the conservation of critical biodiversity, watershed, and groundwater protection; and ensure the continued delivery of high quality ecosystem services.

d) Action (1-5 years)

- i. High priority and high urgency.
- ii. Implement measures to secure their long-term protection through acquisition and proclamation, or Conservation Stewardship.
- iii. Strive to work with willing landowners to obtain formal protected area status where possible and appropriate.
- iv. Any negative land-use activities that are impacting on their critical biodiversity should be discussed with the landowner.
- v. Illegal activities, such as unauthorised mining or prospecting, must be referred to the environmental compliance agencies (e.g. DEA&DP).
- vi. Invasive alien species control programmes should be prioritised and implemented.
- vii. Appropriate fire management and response should be dictated by the ecological informants.

- e) Compatible activities
  - i. Low impact recreation, ecotourism and environmental education.
  - ii. Development on existing transformed footprints only, or in adjacent areas.
  - iii. Job creation through national programmes and EPWP.
  - iv. Research by registered research institutions, subject to a CapeNature permit (as required) and landowner permission.

## **22.2 Critical Biodiversity Area 2 (Optimal)**

- a) Description
  - i. Selected as the best option for meeting biodiversity targets, based on complementarity, efficiency, connectivity and avoidance of conflict with other land or resource uses.
- b) Significance of the habitat
  - i. Local, national and international significance.
  - ii. Although irreplaceable, these sites are degraded, and their loss will have a lower impact than for high quality remnants.
  - iii. Also required for climate change mitigation, animal movement corridors, and to maintain large-scale ecosystem processes (such as groundwater recharge).
- c) Objectives
  - i. Secure formal protected area status where possible.
  - ii. Strive to work with willing landowners to maintain natural ecosystems, restore degraded land to near-natural condition, and manage for no further degradation.
  - iii. Strive to work with willing landowners to manage for the conservation of biodiversity, watershed and groundwater protection; including the restoration of ecological processes where these have become degraded or obstructed.
- d) Action (1-5 years)
  - i. Medium priority.
  - ii. Obtain appropriate formal protected area status where possible and appropriate.
  - iii. Measures to secure their long-term protection should be implemented, e.g. Conservation Stewardship contracts.
  - iv. Any negative land-use activities that are impacting the critical biodiversity should be discussed with the landowner.
  - v. Illegal activities, such as unauthorised mining or prospecting, must be referred to the environmental compliance agencies.



- vi. Invasive alien species control programmes should be prioritised and implemented.
  - vii. Appropriate fire management and response should be dictated by the ecological informants.
- e) Compatible activities
- i. Medium impact recreation and ecotourism.
  - ii. Medium impact development on existing footprints or in adjacent degraded areas.
  - iii. Any low impact development should not have significant environmental impact on ecological processes or management programmes for the site or surrounding sites. If this is unavoidable, mitigation measures must be put in place.
  - iv. Research by registered research institutions, subject to a CapeNature permit (as required) and landowner permission.
  - v. No further expansion of agriculture into these areas.

## **23 Ecological Support Areas**

### **23.1 Ecological Support Area 1**

- a) Description
- i. Natural areas that must be maintained in at least fair ecological condition (semi-natural or moderately modified state) in order to support the ecological functioning of a CBA or protected area, or to generate or deliver ecosystem services.
- b) Significance of the habitat
- i. Local, national and international significance.
  - ii. Required to make existing remnants ecologically viable and to reduce the edge-to-area ratio, making conservation actions more financially sustainable in the long-term.
  - iii. Also required for climate change mitigation, animal movement corridors, and to maintain large-scale ecosystem processes (such as groundwater recharge).
- c) Objectives
- i. Secure appropriate land-use zoning or formal protected area status where possible.
  - ii. Strive to work with willing landowners to maintain natural ecosystems, restore degraded portions and manage for reduced level of impact on remaining natural systems.

- iii. Strive to work with willing landowners to manage for ecological functioning, watershed and groundwater protection.
  - iv. Restoration of ecological processes where these have become degraded or obstructed.
- d) Action (1-5 years)
- i. Medium priority.
  - ii. Determine zoning and obtain appropriate formal protected area status where possible.
  - iii. Measures to secure their long-term protection should be implemented, e.g. Conservation Stewardship contracts.
  - iv. Any negative land-use activities that are impacting on the critical biodiversity should be discussed with the landowner.
  - v. Illegal activities, such as unauthorised mining or prospecting, must be referred to the environmental compliance agencies.
  - vi. Invasive alien species control programmes should be prioritised and implemented.
- e) Compatible activities
- i. Where outside of the Urban Edge, agricultural practices should continue. However, the intention should be to ensure that these agricultural practices are not detrimental to the surrounding CBAs or protected areas.
  - ii. Any low impact development should not have any significant environmental impact on ecological processes or management programmes for the site or surrounding sites.

## **23.2 Ecological Support Area 2**

- a) Description
- i. Severely modified ecological condition (e.g. cultivated areas in riparian zones) but retain sufficient ecological functioning to fulfil the purpose for which it was selected, namely to support the ecological functioning of a CBA or protected area, or to generate or deliver ecosystem services.
- b) Significance of the habitat
- i. Local significance.
  - ii. Required to make existing remnants or protected areas more ecologically viable and to reduce the edge-to-area ratio, making conservation actions more financially sustainable in the long-term.
  - iii. Also required for climate change mitigation, animal movement corridors, and to maintain large-scale ecosystem processes (such as groundwater recharge).

c) Objectives

- i. Encourage appropriate land-use activities.
- ii. Secure appropriate land-use zoning or some form of conservation protection where appropriate and possible.
- iii. Strive to work with willing landowners to maintain, improve or restore ecosystem functioning.
- iv. Strive to work with willing landowners to enhance biodiversity, watershed and groundwater protection through, for example, innovative agricultural practices and stormwater management.
- v. Strive to work with willing landowners to restore ecological processes where these have become degraded or obstructed.
- vi. Minimise fragmentation of remaining natural habitats and corridors.

d) Action (1-5 years)

- i. Low priority.
- ii. Management plans of Protected Areas should note ESA 2 in their zones of influence.
- iii. Invasive alien species control programmes should be implemented.

e) Compatible activities

- i. Where outside of the Urban Edge, agricultural practices should continue, but the intention should be to ensure that these agricultural practices are not detrimental to the surrounding CBAs or protected areas.
- ii. Development should not have a significant environmental impact on existing intact ecological corridors and processes or management programmes for the site or surrounding sites.

## 24 Other Natural Areas

a) Description

- i. Vegetation in fair or poor condition not selected as CBA, because national biodiversity targets can be met elsewhere in the Cape Town BioNet.
- ii. Also not selected as ESA, because they are not deemed to support the ecological functioning of a CBA or protected area, or to generate or deliver ecosystem services.

b) Significance of the habitat

- i. Loss of CBAs or protected areas might mean that ONAs may become CBAs or ESAs in future, resulting in a less efficient and more land-hungry Cape Town BioNet configuration.

- ii. May become important if the national biodiversity targets are revised.
- c) Objective
  - i. Sustainable management within general rural land-use principles.
- d) Action (1-5 years)
  - i. Low priority and low urgency.
  - ii. Negotiable.
  - iii. Invasive alien species control programmes should be implemented.
- e) Compatible activities
  - i. Subject to the various approval processes, some higher impact activities, development or agricultural activities may be considered.
  - ii. For Critically Endangered or Endangered vegetation types, this would be subject to the normal EIA process.

## **25 No Natural Habitat Remaining**

- a) Description
  - i. Unselected sites with little or no conservation value.
  - ii. Areas severely or irreversibly modified by human activities.
  - iii. Includes urban and rural development, cultivated land and mines.
- b) Significance of the habitat
  - i. Little or no conservation value.
  - ii. May contain degraded wetlands.
- c) Objective
  - i. Apply accepted land-use principles as outlined in the DSDFs.
- d) Action (1-5 years)
  - i. Low or no priority.
  - ii. In terms of biodiversity conservation, no action required.
- e) Compatible activities
  - i. As per the DSDF.

## 26 Green Infrastructure Network

It is important to note that the Cape Town Biodiversity Spatial Plan 2025 is not about all open space. CCT has a well-established Green Infrastructure Programme<sup>6</sup>, the purpose of which is the protection and enhancement of existing natural assets and the promotion of new green infrastructure assets, in order to underpin Cape Town's sustainability, enhance the city's living environment and improve its resilience to the effects of climate change. As part of the Green Infrastructure Programme, green open spaces (public and private sites >1 ha) have been mapped based on their ecosystem service provision. These areas are contributing to providing ecological, social and infrastructural services, and together with corridors, are spatially captured as the Green Infrastructure Network (GINet). The GINet is intended to be an informant to help guide decision making, by highlighting which areas are providing green infrastructure services, with a view to consideration of those during the development process, in order to protect and enhance the ecosystem services and green infrastructure provision, and promote and create new green infrastructure assets.

The GINet is thus an integrated public open space system that aims to mitigate climate change and make the city liveable and healthy. The GINet is currently adopted as CCT Policy in the Environmental Strategy and Climate Change Strategy.

The Cape Town BioNet and GINet were both developed as informants for decision making that identify the natural assets of Cape Town, as well as provide important information that one should be cognisant of. Both these networks, explained and compared in Table 6

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<sup>6</sup> For more information, visit <https://www.capetown.gov.za/departments-city-initiatives/environmental-resource-management/green-infrastructure-programme>

Table 6, should be considered to ensure protection, minimal loss and enhancement of the natural environment.

The GINet considers and incorporates the Cape Town BioNet. However, the Cape Town BioNet must be considered specifically and independently of the GINet.

Note also that this Cape Town Biodiversity Spatial Plan 2025 does not specifically cover Ecosystem-based Adaptation and Nature-based Solutions. While these terms may come up in the context of spatial biodiversity assessment, prioritisation and planning, they “belong” to the climate change sector, emanating from its policy and legislative context.

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Table 6: Comparison between the Cape Town BioNet and GINet

<b>Biodiversity Network (Cape Town BioNet)</b>	<b>Green Infrastructure Network (GINet)</b>
<b>What is the Cape Town BioNet?</b> <ul style="list-style-type: none"> <li>• Fine-scale systematic biodiversity plan for Cape Town.</li> <li>• Covers all land in the municipality and is coordinated by the CCT Biodiversity Management Branch.</li> <li>• Includes terrestrial and aquatic biodiversity areas.</li> <li>• Prompts various statutory obligations.</li> </ul>	<b>What is the GINet?</b> <ul style="list-style-type: none"> <li>• A network of Cape Town's green and blue spaces, with associated information relating to ecological, social and infrastructural services provided by them.</li> <li>• Corridors, linear features to ensure connectivity between spaces, are also identified.</li> <li>• Has no statutory obligations.</li> </ul>
<b>Purpose of the BioNet</b> <ul style="list-style-type: none"> <li>• The identification and prioritisation of areas of biodiversity importance, in relation to set national biodiversity targets, and for preservation of biodiversity pattern and process.</li> <li>• To ensure that a representative sample of biodiversity is protected, to meet targets for vegetation types in the city to contribute to national level targets aligned to international conservation agreements.</li> <li>• Promotes sustainability and climate resilience.</li> <li>• Aims for maximising efficient, effective and sustainable forms of ecosystem service provision.</li> </ul>	<b>Purpose of the GINet</b> <ul style="list-style-type: none"> <li>• To protect and enhance existing natural assets, and to promote and create new GI assets.</li> <li>• Intended to underpin the sustainability of Cape Town, enhance the city's living environment and improve its resilience to Climate Change.</li> <li>• Highlights ecosystem services provided by the natural and green spaces (such as pollution assimilation, recreation, cultural and spiritual value) and where opportunity exists to enhance some of these.</li> </ul>
<b>Methodology of the BioNet</b> <ul style="list-style-type: none"> <li>• Systematic Biodiversity Planning approach using Marxan analysis methodology.</li> <li>• Spatially represents biodiversity pattern (ecosystems and species) and process (connectivity, consolidation, large fauna home ranges, special features, Climate Change adaptation, etc.).</li> </ul>	<b>Methodology of the GINet</b> <ul style="list-style-type: none"> <li>• Interrogative District Mapping Approach, an 'expert mapping' approach. Space identification is based on aerial photography with associated information derived from available information and input from district staff through collective interrogation of 23</li> </ul>

<ul style="list-style-type: none"> <li>• Priority areas are designed to be spatially efficient (meet biodiversity targets in the smallest area possible) and to avoid conflict (with other land and resources uses).</li> </ul>	<p>ecosystem service-related and nine general questions.</p> <ul style="list-style-type: none"> <li>• Is the Spatial Component of the Green Infrastructure Programme (GIP).</li> </ul>
<p><b>Function of the BioNet</b></p> <ul style="list-style-type: none"> <li>• Key informant in current and future spatial planning.</li> <li>• Key structuring element in the MSDF and DSDF-EMFs.</li> <li>• Limits further loss of biodiversity by improving land-use decision making.</li> <li>• Informs action for Protected Area expansion and management effectiveness.</li> <li>• Informs action for prioritisation and implementation of ecosystem restoration.</li> </ul>	<p><b>Function of the GINet</b></p> <ul style="list-style-type: none"> <li>• Acts as an informant to development decision-making to help ensure that ecosystem services and green assets are maintained and, where possible, enhanced or created.</li> <li>• Prompts principles for consideration in relation to ecosystem service provision when developments are being planned.</li> <li>• Seeks to ensure connectivity and linkage between green spaces.</li> </ul>



## **PART E: ADDITIONAL MEASURES FOR EFFECTIVE MANAGEMENT OF BIODIVERSITY**

The implementation measures outlined below relate to the various organisations with operational mandates in Cape Town, including SANParks, CapeNature, Biosphere Reserves and the CCT Municipality, as and where appropriate.

### **27 Protected Area Management Plans**

It is fundamental that all land secured for conservation is managed and resourced appropriately. To ensure that all management targets and objectives are reached, management activities should be guided by strategic, site-specific Protected Area Management Plans (PAMPs) or Environmental Management Plans (EMPs). PAMPs are required for all proclaimed protected areas in terms of Sections 39 and 41 of NEMPAA.

Protected Areas also require subsidiary plans in order to guide their Annual Plan of Operation. Examples of subsidiary plans include invasive species management, fire management, and restoration.

### **28 Management Effectiveness Tracking Tool**

Protected Area management activities need to be monitored and evaluated to review and improve performance. This is implemented through the Management Effectiveness Tracking Tool for South Africa (METT-SA03), a rapid, site-level assessment tool. METT-SA03 is a nationally coordinated self-assessment of protected area management, by the management authorities themselves.

The CCT Biodiversity Management Branch implements METT-SA03 on CCT nature reserves every two years. The METT-SA03 reports are uploaded onto the DFFE METT Webtool and the Intervention Reports are submitted to CapeNature.

### **29 Invasive Species Management**

Invasive alien species in the CCT are managed according to the NEMBA Alien and Invasive Species Regulations (2014) and the Local Biodiversity Strategy and Action Plan (LBSAP).

#### **29.1 Invasive Alien Plants**

Invasive alien plants include annual grasses, and woody and herbaceous perennial species that are already established or emerging as invasive species. Species must be controlled through clearing efforts.

The threats represented by these invasive alien species in terms of biodiversity loss, fire hazard, water availability and shelter for criminal activity all constitute major concerns to the CCT administration.

The CCT Biodiversity Management Branch's Invasive Species Unit is responsible for assessing the extent of invasive alien vegetation in CCT Nature Reserves and Conservation Areas; and for setting goals for invasive species control.

Systematic planning and prioritisation of areas must precede control operations to ensure the highest impact and long-term success. Management interventions include a range of actions such as prevention, early detection and rapid response, control, eradication and containment, depending on the nature of the site and the management objectives thereof.

Before any clearance can be effective, an overall assessment of the status should be conducted, including data capture, mapping and regular updates of the information. Areas should be cleared systematically and not in an *ad hoc* fashion. Clearing operations should be synchronised amongst neighbouring landowners.

## **29.2 Invasive Alien Animals**

The negative impacts of invasive alien animal species on Cape Town's biodiversity should not be underestimated. Species-specific control programmes are being implemented by the CCT for House Crow (*Corvus splendens*), Mallard Duck (*Anas platyrhynchos*), Guttural Toad (*Sclerophrys gutturalis*) and Polyphagous Shot Hole Borer (*Euwallacea fornicatus*).

Activities such as the illegal pet trade and the introduction of invasive alien animals will be addressed in species-specific programmes. Early warning and detection systems are essential to prevent the arrival and establishment of new invasive alien species. Of particular concern is people deliberately introducing extra-limital species from other parts of South Africa into their gardens. There is huge risk associated with this and a public awareness campaign is needed.

## **30 Restoration**

Most of the CCT biodiversity remnants and wetlands contain degraded areas. Therefore, restoration is a priority management activity once these areas have been

secured for conservation. Invasive alien vegetation control is an integral part of restoration. In many cases careful invasive alien control, followed by a prescribed ecological burn to stimulate indigenous plant recruitment, with alien follow-up control and appropriate fire management, is sufficient to restore an area – this is known as ‘passive restoration’. In other cases, where indigenous seed banks are depleted, plant reintroduction is also required to restore the habitat structure and function, and species composition – this is known as ‘active restoration’.

Planning needs to be done to prioritise areas for active restoration. Key informants are the ecosystem threat status of the vegetation and the importance of restoration for ecological processes. The highest priority ecosystem for restoration in the CCT is Cape Flats Sand Fynbos, which is Critically Endangered with half of its remaining habitat in a very poor ecological state.

Restoration activities are already in progress at most protected areas in the city. Future restoration activities will similarly focus on priorities in nature reserves and other secure conservation areas.

### **31 Protected Area Expansion**

The National Protected Area Expansion Strategy (NPAES) emphasises that all threatened ecosystems are important for protected area expansion. However, the NPAES focus areas are large, intact and unfragmented areas suitable for creating large protected areas. One such area in Cape Town is also a provincial priority – the Dassenberg Coastal Catchment Corridor. It is also one of the most important climate change adaptation corridors in the Cape Floristic Region (Pence, 2009). This corridor stretches from the Riverlands Nature Reserve, located just outside the CCT boundary, to the West Coast and encompasses large areas of the Cape Town BioNet 2024 in the north of the city.

The Cape Town BioNet 2024 includes an extended planning domain with a 10 km buffer outside of the CCT municipal boundary. This 10 km buffer aims to ensure adequate buffering and connectivity of CCT Protected Areas, to have cost-effective offset options, and to conserve threatened ecosystems and species whose distributions span municipal boundaries.

Strategic Objective 2 of the LBSAP is to “Secure formal conservation status, manage, and maintain terrestrial and wetland priority sites and species”. Several newly acquired sites and additions to the existing CCT protected areas have been secured. The process to proclaim these sites under NEMPAA was initiated in 2023.

The CCT sets annual conservation targets under the IDP. The current conservation target is to secure 65,8% of the baseline 2009 BioNet by June 2027.

### **31.1 Public Land**

Biodiversity areas managed by other CCT line functions (e.g. Recreation and Parks Department) that are reviewed, but do not warrant Nature Reserve status under NEMPAA, become Biodiversity Agreement sites. The CCT's Biodiversity Management Branch enters into a Memorandum of Agreement with the specific line department to ensure that the biodiversity on site is managed according to an agreed EMP. To date, 16 CCT Biodiversity Agreement sites have been contracted in perpetuity.

### **31.2 Private Land**

In order to grow the conservation estate, it is essential to consider mechanisms to secure private land. Conservation Stewardship is one of the implementation tools that may appeal to landowners, especially outside of the Urban Edge, as it offers incentives such as rates rebates and biodiversity management advice and assistance. For landowners inside the Urban Edge, a possible way forward may include biodiversity offsets as part of the conditions of approval in an EIA.

The Conservation Stewardship Programme is a voluntary conservation initiative. Once a property has been identified, the landowner is approached and a relationship is developed. Landowners are informed of the ecological value and global significance of their property; as well as the potential fiscal and other conservation incentives. A landowner then either proceeds with this process by going into an agreement with a conservation organisation, or the property is earmarked as a site for land acquisition.

Conservation Stewardship is implemented in Cape Town by the SANParks Land Consolidation Unit for areas in the Cape Peninsula Protected Natural Environment (adjacent to Table Mountain National Park), and city-wide by CapeNature and the CCT Biodiversity Management Branch. Currently, several landowners are in process of signing perpetuity conservation contracts.

### **31.3 Biodiversity Offsets**

Conservation areas may be secured reactively as part of the Environmental Authorisation process through a biodiversity offset. The process for biodiversity offsets must follow the Western Cape Guideline on Biodiversity Offsets (DEA&DP, 2015) and the National Biodiversity Offset Guideline (DFFE, 2023). Where a significant negative impact to biodiversity cannot be avoided or mitigated on site, a development may be approved by the competent authority based on an off-site offset as calculated by an appointed offset specialist.

For biodiversity offsets to have meaningful long-term benefits, all land set aside for biodiversity conservation must come with adequate resources to manage the site.

### **31.4 Conservation Land Banks**

It is not always practical or pragmatic to avoid all biodiversity remnants in development applications. The requirement to offset for the loss of indigenous vegetation can be extremely complex and time consuming, especially when done reactively. This may lead to long and costly delays. Conservation Land Banks offer a mechanism for proactively providing for biodiversity offset requirements.

The CCT has been enabling and facilitating much needed economic and industrial development in the Atlantis area through the Atlantis Conservation Land Bank. The process has simultaneously enabled the CCT to acquire and manage land of exceptional biodiversity value located outside the Urban Edge within the Dassenberg Coastal Catchment Corridor, to expand Witzands Aquifer Nature Reserve.

The Metro Southeast Strandveld Conservation Implementation Plan (CIP) is a collaborative CCT-led project including conservation partners CapeNature, DEA&DP, and SANBI. The concept is to facilitate development on Strandveld remnants in the Metro Southeast that are not a priority to be conserved, while protecting and providing management resources to others. The CCT established the Macassar East Conservation Land Bank to protect high quality Cape Flats Dune Strandveld vegetation, expand Wolfgat Nature Reserve, and facilitate (mostly housing) development opportunities.

The Atlantis Conservation Land Bank and Metro Southeast Strandveld CIP are landmark, precedent setting projects on a national scale. There are few comparable examples of strategic biodiversity offsetting projects that are at such an advanced stage of implementation.

It is important to remember that not all sites on the Cape Town BioNet can or should be offset. Irreplaceable sites should be protected as per the legislation.

## **32 Opportunities for Sustainable Development and Livelihoods**

Several studies emphasise the importance of the natural environment in underpinning livelihoods in the CCT, both directly through job creation and indirectly through various ecosystem services.

Note that while the income from CCT nature reserves is important, it is not the primary basis for conserving these areas. The most important aspect is to provide a safe, natural experience, while protecting and enhancing our natural heritage (biodiversity assets). Coupled with this is the need to keep gate fees, activity and hall hiring costs affordable so that our nature reserves remain accessible to, and are well used by, a wide range of society.

### **32.1 Tourism**

Cape Town is a leading destination for local and international tourists and many people are attracted to the city by its outstanding natural beauty and biodiversity. Protected Areas are geared to receive visitors, from the iconic TMNP to the CCT's nature reserves. Most nature reserves have designated areas for high, medium and low impact activities; and visitors are guided to these areas as required in order to minimise negative impacts on biodiversity. Most CCT-run nature reserves have a zonation plan as part of the management plan to indicate zones that can accommodate different types of visitor activities aligned to the desired state and sense-of-place per sensitivity zone. These will inform Conservation Development Frameworks as part of the PAMP to capture the needs and impacts of various types of infrastructure for staff and user groups; aligned to the sensitivity zones in the reserve.

There is potential to increase the tourism value of certain nature reserves and conservation areas across the city, especially in low-income suburbs where the local communities may view these sites as unsafe and undesirable. Unlocking the potential of such sites could provide opportunities for local businesses to benefit from reserve-based sustainable ecotourism ventures.

### **32.2 Job Creation through the Expanded Public Works Programmes**

In addition to permanent employment opportunities in the CCT's EMD, environmental resource management in general has the potential to create many temporary job opportunities. Through the national Expanded Public Works Programme (EPWP), many employment opportunities have been created in conservation areas, other natural remnants and in the Green Jobs Unit (through the Kadar Asmal Programme) across the city.

Supporting and running parallel to the job creation programme are training and formal skills development programmes. For example, the Kader Asmal skills development programme funded by the EPWP Department. This programme aims to provide opportunities for young professionals to acquire the necessary skills, experience and exposure in the environmental management sector, specifically management of invasive species. Through the Kader Asmal Programme aquatic

weeds, invasive terrestrial plants, invasive animals, restoration, revegetation and environmental infrastructure initiatives are undertaken across the CCT. The Kader Asmal skills development programme includes on-the-job training for learnerships, students and interns. It is important to be able to assist with career development; and the Biodiversity Management Branch makes every effort to provide opportunities for EPWP and skills development incumbents. Each year, roughly half of the vacancies in the Biodiversity Management Branch are filled with individuals from the EPWP and skills development programmes, or previous EPWP and skills development participants.

### **33 People and Conservation**

Activities related to People and Conservation are key interventions to maintain support for biodiversity conservation initiatives and to communicate the importance of conserving the natural environment in order to underpin sustainable development. The CCT has adopted a people-centred approach to biodiversity management. Without buy-in from the general public, especially neighbouring communities, the continued protection of natural areas would be extremely challenging.

The following key biodiversity messages are important to communicate:

- 1) Cape Town's biodiversity is our natural heritage and it is unique and irreplaceable.
- 2) We rely on biodiversity. It gives us natural resources, clean air, water, food, shelter, natural beauty and much more.
- 3) Conserving and managing our natural open spaces is critical if we are to ensure Cape Town is sustainable into the future.
- 4) Cape Town's biodiversity is under threat. We need to act now or it will be lost forever.
- 5) The CCT manages more than 20 nature reserves.
- 6) Protecting our natural heritage would not be possible without the support of Capetonians.
- 7) The nature reserve network helps make our city sustainable and resilient to climate change, through the ecosystem services provided by nature.
- 8) The nature reserve network provides many opportunities for job creation, health and wellbeing, tourism, recreation and leisure.

## **PART F: MONITORING AND REVIEW**

### **34 Monitoring**

Effective monitoring is reliant on accurate and up-to-date information. The CCT and bioregion have several programmes, initiatives and reporting protocols, which can be used as sources for monitoring information and data for this Cape Town Biodiversity Spatial Plan 2025. These include the MSDF Goals and Objectives, Cape Town BioNet, Protected Area Management Plans, Management Effectiveness Tracking Tool (METT-SA03), CCT State of Environment reports, Conservation Stewardship Agreements, Western Cape Protected Area Expansion Strategy, Western Cape Biodiversity Spatial Plan 2023, South African Protected Area Database (SAPAD) and South African Conservation Area Database (SACAD).

The three headline environmental indicators used to track implementation progress in Cape Town are the extent of natural vegetation remaining in the city, the extent (percentage and hectares) of the Cape Town BioNet that is formally protected, and Management Effectiveness on Protected Areas (based on METT-SA03 results).

### **35 Revision**

The CCT's Environmental Management Department is responsible for updating the Cape Town Biodiversity Spatial Plan. The updating of the plan will be carried out in consultation with conservation partner organisations, other CCT Departments and relevant stakeholders.

The Cape Town Biodiversity Spatial Plan review process will ideally be coordinated with the updating of the CCT's spatial planning documents (IDP, MSDF and DSDFs), to ensure integration and mainstreaming of biodiversity in the CCT's spatial planning. Owing to the rapid pace of development in the CCT, it is necessary to update the Cape Town BioNet remnant layer on an ongoing basis. This is also necessitated by the requirement to report annually on progress on securing the Cape Town BioNet. The Cape Town Biodiversity Spatial Plan 2025 will be monitored and reviewed against set biodiversity targets and indicators; as well as against protected area targets and indicators. These align with the targets and indicators set in the CCT's State of Environment report, Corporate Scorecard, and Circular 88 environmental reporting to National Treasury.



## PART G: RESOURCES

### 36 GIS Files

The GIS data layers used in the compilation of the maps, including the Cape Town BioNet spatial layer are available on the CCT's Open Data Portal [https://odp-cctegis.opendata.arcgis.com/datasets/4f2d7835518a4e6b8205ce12d77ff463\\_133/explore?location=-33.913196%2C18.654700%2C9.39](https://odp-cctegis.opendata.arcgis.com/datasets/4f2d7835518a4e6b8205ce12d77ff463_133/explore?location=-33.913196%2C18.654700%2C9.39) and on request from [enviro.gis@capetown.gov.za](mailto:enviro.gis@capetown.gov.za).

Requests for data are subject to the CCT's Terms and Conditions for the Supply of Digital Data. The primary spatial layer, the Cape Town BioNet 2024, is also publicly available on City Map Viewer <https://citymaps.capetown.gov.za/EGISViewer>.

### 37 References

- Cape Town Bioregional Plan 2015.  
[https://resource.capetown.gov.za/documentcentre/Documents/Bylaws%20and%20policies/Bioregional\\_Plan\\_CCT\\_FINAL\\_2015-08-19\\_policy\\_number\\_44854.pdf](https://resource.capetown.gov.za/documentcentre/Documents/Bylaws%20and%20policies/Bioregional_Plan_CCT_FINAL_2015-08-19_policy_number_44854.pdf)
- City of Cape Town. 2018. City of Cape Town Biodiversity Report 2018. Unpublished, Cape Town.  
[https://resource.capetown.gov.za/documentcentre/Documents/City%20research%20reports%20and%20review/CCT\\_Biodiversity\\_Report\\_2018-07-27.pdf](https://resource.capetown.gov.za/documentcentre/Documents/City%20research%20reports%20and%20review/CCT_Biodiversity_Report_2018-07-27.pdf)
- City of Cape Town. 2021. City of Cape Town Know Your Coast Report 2021. Unpublished, Cape Town.  
[https://resource.capetown.gov.za/documentcentre/Documents/City%20research%20reports%20and%20review/Know\\_Your\\_Coast\\_2021\\_Report.pdf](https://resource.capetown.gov.za/documentcentre/Documents/City%20research%20reports%20and%20review/Know_Your_Coast_2021_Report.pdf)
- City of Cape Town. 2019. City of Cape Town Local Biodiversity Strategy and Action Plan 2019. Unpublished Report, Cape Town.  
[https://resource.capetown.gov.za/documentcentre/Documents/City%20strategies,%20plans%20and%20frameworks/Biodiversity\\_Strategy\\_and\\_Action\\_Plan.pdf](https://resource.capetown.gov.za/documentcentre/Documents/City%20strategies,%20plans%20and%20frameworks/Biodiversity_Strategy_and_Action_Plan.pdf)
- DEA&DP. 2015. Western Cape Guideline on Biodiversity Offsets. Prepared by Susie Brownlie and Mark Botha for DEA&DP, Cape Town.
- DFFE. 2023. National Biodiversity Offset Guideline. First edition (January 2023). Published for implementation on 23 June 2023 in Government Gazette 48841 (Notice Number 3569).  
[https://www.dffe.gov.za/sites/default/files/gazetted\\_notices/nema\\_nationalbiodiversityoffset\\_guideline\\_g48841gon3569.pdf](https://www.dffe.gov.za/sites/default/files/gazetted_notices/nema_nationalbiodiversityoffset_guideline_g48841gon3569.pdf)

Holmes, P.M., Rebelo, A.G., Dorse C., & Wood, J. 2012. Can Cape Town's unique biodiversity be saved? Balancing conservation imperatives and development needs. *Ecology and Society*. 17(2): 28

Maze, K. & Rebelo, A.G. 1999. Core flora conservation areas on the Cape Flats. FCC Report 99/1. Botanical Society of South Africa, Claremont.

National Biodiversity Framework 2019-2024.

[https://www.dffe.gov.za/sites/default/files/gazetted\\_notices/nema\\_biodiversityframework2019.2021\\_g46798gon2423.pdf](https://www.dffe.gov.za/sites/default/files/gazetted_notices/nema_biodiversityframework2019.2021_g46798gon2423.pdf)

National Biodiversity Assessment 2018. <https://www.sanbi.org/biodiversity/building-knowledge/biodiversity-monitoring-assessment/national-biodiversity-assessment/>

Nel, J.L., Driver, A., Strydom, W.F., Maherry, A., Petersen, C., Hill, L., Roux, D.J., Nienaber, S., van Deventer, H., Swartz, E. & Smith-Adao, L.B. 2011. ATLAS of FRESHWATER ECOSYSTEM PRIORITY AREAS in South Africa: Maps to support sustainable development of water resources Report to the Water Research Commission. WRC Report No. TT 500/11.

Pence, G.Q.K. 2009. Climate Adaptation Scenarios for the Cape Floristic Region: Technical Report. Unpublished Report, Table Mountain Fund, World Wildlife Fund-South Africa, Cape Town.

Pence, G. 2021. The Biodiversity Network for the City of Cape Town Municipal Area and Water Supply Catchments, Systematic Biodiversity Planning Analysis: 2021 Methods and Results. Produced for the Environmental Management Department, City of Cape Town, November 2021.

Rebelo, A.G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. 2006. Fynbos Biome. In: Mucina, L. & Rutherford, M.C. (editors). *The Vegetation of South Africa, Lesotho and Swaziland*. Strelitzia 19, SANBI, Pretoria.

SANBI. 2017. Technical guidelines for CBA Maps: Guidelines for developing a map of Critical Biodiversity Areas and Ecological Support Areas using systematic biodiversity planning. First Edition (Beta Version), June 2017. Compiled by Driver, A., Holness, S. & Daniels, F. South African National Biodiversity Institute, Pretoria.

SANBI. 2019. National Biodiversity Assessment 2018: The status of South Africa's ecosystems and biodiversity. Synthesis Report. South African National Biodiversity Institute, an entity of the Department of Environment, Forestry and Fisheries, Pretoria. pp. 1–214.

SANBI. 2023. Lexicon of Spatial Biodiversity Assessment, Prioritisation and Planning in South Africa. Second Edition 2023. Compiled by Driver, A. and Botts, E. South African National Biodiversity Institute, Pretoria.